Louisiana Climate Action Plan

EXCERPT: Final Portfolio

January 10, 2021

GOVERNOR'S OFFICE OF COASTAL ACTIVITIES

Table of Contents

Climate Strategies and Actions

INTRODUCTION

~~As framed in the Climate Action Plan so far, Governor Edwards' imperative for the CITF alongside the planning process, consequences of inaction, and benefits of climate action all point to the necessity of a comprehensive approach to GHG emission reduction in Louisiana, not only to attain net zero by 2050 but also to maximize co-benefits for other CITF fundamental objectives. Louisiana's comprehensive approach hinges upon high-level vision statements, herein called "strategies," and practical policy steps, herein called "actions," for each emission-producing sector and cross-cutting priority. The following section lays out a portfolio of 28 strategies and 84 actions, which has undergone two rounds of analysis through the EPS Tool and two rounds of review by the CITF, its subgroups, and the public.~~

~~**Note: The following Portfolio of Strategies and Actions in this Draft Climate Action Plan is identical to the December 3 Revised Portfolio because it is currently undergoing a public comment period through December 31, 2021. Based on comments submitted in this timeframe, the Portfolio will be revised a final time prior to the January 11 CITF Meeting and Final Climate Action Plan.*~~

Meeting the scale of the challenge to reduce Louisiana's GHG emissions to net zero by 2050, avoid the worst impacts of climate change, and realize social, economic, environmental, equity, and resilience co-benefits for the state requires immediate, aggressive, and comprehensive action. This plan consists of 28 strategies (high-level approaches) and 84 actions (practical and implementable policy steps) focused on the following areas critical to a decarbonized future for Louisiana:

- Clean Energy Transition
- Industrial Decarbonization
- Actively Managed Methane Emissions
- Transportation, Development, and the Built Environment
- Natural and Working Lands and Wetlands
- An Inclusive, Low-Carbon Economy
- Collaboration and Partnership to Ensure Successful Implementation
- Accountability and Adaptability to Ensure Lasting Success

The strategies and actions detailed in the following section were developed with expert guidance from sector committees, as well as ideas and recommendations shared by Task Force and advisory group members and the public. This portfolio of strategies and actions has undergone rigorous evaluation and iterative improvement – including two-rounds of analysis of anticipated GHG emissions reductions using the EPS tool, a survey to elicit the expertise of advisory group members in forecasting the anticipated impacts to the other fundamental objectives, and multiple opportunities for review and comment by the Task Force and the public. (See "Planning Timeline" for more detail.)

Reaching net zero will require concrete action to reduce GHG emissions across all sectors of Louisiana's economy. However, the overwhelming contribution of emissions from the industrial sector, which accounts for 66% of overall state emissions, provides a unique challenge and requires Louisiana to chart a path forward that looks different in many ways from other states.

Louisiana's ultimate success will hinge upon a holistic and coordinated approach to these three interconnected policy pillars: **renewable electricity generation, industrial electrification, and industrial fuel switching to low- and**

no-carbon hydrogen. Effectively reducing industrial emissions will require collaboration, investment, appropriate sequencing, and expedient implementation of Clean Energy Transition and Industrial Decarbonization actions. The imperative of implementing those high-impact actions does not take away from actions in other sections of the plan, which also require immediate implementation to realize emission reductions and other benefits for Louisiana.

Louisiana can attain net zero GHG emissions by 2050 by fully and aggressively implementing the strategies and actions set forth in this plan. Actions focused on accountability will ensure responsible, transparent, and timely implementation. Actions focused on adaptive management will ensure that ongoing implementation of this Climate Action Plan and subsequent iterations of the plan are well-informed by emerging data and technologies, forthcoming understanding of impacts, and innovation in and implementation of monitoring. An implementation table is included following the full list of strategies and actions.

The strategies and actions in the portfolio have been iteratively crafted and improved upon in an effort to balance the sometimes-diverging priorities and perspective of CITF members and stakeholders while also achieving the scale and ambition to reach net-zero GHG emissions by 2050 in a manner that provides benefits for Louisiana's people, economy, and environment. Reaching consensus of CITF members on an ambitious plan that can achieve the vision and goals set forth by Governor Edwards was a sought-after priority. However, the CITF has also recognized the need to enable an individual member to state their formal dissent to a specific action within this plan, while still supporting the plan overall. Where there is formal dissent to a specific action, a summary of the reason(s) for dissent along with the name(s) of dissenting CITF members are included below the action.

Clean Energy Transition

Electricity is the backbone of the economy and a requirement for high quality of life, powering, heating, and cooling homes and business, information systems, ~~and~~ infrastructure, and industrial facilities of every size. As the world moves to reduce greenhouse gases (GHGs) from the economy, clean and ~~,~~ reliable electricity will become even more important as the built environment, transportation systems, and large industrial users all move away from the combustion of fossil fuels and onto the electric grid. To make the most of this transition while meeting greenhouse gas emissions reductions goals and the fundamental objectives, Louisiana should support this transition by working to ensure that the electricity supplying all of these activities is clean. This section contains two major strategies, one targeting the grid and the utilities~~,~~ and the other, end users. ~~Infrastructure and economic build out are intentionally not addressed in this section.~~

- Strategy 1: Shift towards a clean, renewable, and resilient power grid
- STRATEGY 2: Increase access to and deployment of distributed energy resources

EXCERPT: Final Portfolio (with inline edits), Louisiana Climate Action Plan

STRATEGY 1. Shift towards a clean, renewable, and resilient power grid

The transformation of our electricity grid to clean and renewable energy sources is a fundamental building block for meeting Louisiana's climate action goals. Here, "clean" is defined as energy generation that results in emission of little to zero GHGs (e.g., nuclear, biowaste, and natural gas with carbon capture) and "renewable" is defined as naturally replenishing energy sources with zero GHG emissions (e.g., solar, wind, hydropower, and geothermal). As we shift energy sources to electricity used by Louisiana's industries, vehicles, buildings, and more, overall demand for electricity will increase and the source of that electricity becomes increasingly important. Actions under this strategy are directed at the electric grid and power generation facilities, including the utilities that aim to reliably meet the rapidly increasing demands of an electrified economy. Here, actions are aimed at increasing clean and renewable sources of power generation, while also increasing the reliability and resilience of the electricity grid.

Highlights of how this strategy can realize benefits for Louisiana:

- *Public Health:* Generating electricity from increasingly renewable sources can improve air quality and reduce negative public health impacts to communities living near power plants.
- *Economy and Jobs:* Investment in local renewable power production can lead to the creation of new jobs and economic opportunity for Louisianans, particularly with accompanying strategies to support local job training and economic development.
- *Community Resilience:* Updating and modernizing the electrical grid may reduce downtime due to weather or other disruptions, thus supporting communities by improving electrical grid dependability.

ACTION 1.1 Adopt a Renewable and Clean Portfolio Standard and create a statewide market for Renewable Energy Certificates

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / utilities	**Establish a RCPS**	**100% renewable or clean by 2035, at least 80% from renewable sources**

A Renewable and Clean Portfolio Standard (RCPS) is a law or regulation that reduces the GHG emissions associated with electricity generation. Louisiana's RCPS would require electricity used in the state to be generated from an increasing percentage of renewable or clean sources with clear guidelines for how combined heat and power generation should be considered. To qualify as clean energy, power generation facilities reliant on carbon capture technology should capture at least 90% of facility emissions, which is currently a typical target for CCS projects, but the capture efficiency requirement should increase as the technology improves and costs decline over time.~~,~~ Louisiana's RCPS should align with proposed federal requirements that ~~all~~ 100% of electricity generation be ~~generated~~ derived from renewable or clean resources by 2035, with at least 80% of total generation from renewable sources by 2050. ~~and~~ The RCPS should also encourage improvements in efficiency, be flexible enough to account for disruptions like major hurricanes, and not overburden customers with additional costs or reduced reliability, while still aggressively ~~as well as a~~pursuing reductions in GHG emissions. To reduce generation from unabated natural gas peaker plants, demand response should also be included as a mechanism to achieve targets.

To support the RCPS, Louisiana should also establish a statewide market or join an existing market for Renewable Energy Certificates (RECs) available to electric utilities, which are market-based instruments that represent the property rights to the environmental, social, and other non-power attributes of renewable electricity generation. RECs play an important role in accounting, tracking, and assigning ownership to renewable electricity generation and use. The REC value and market would be underpinned by requiring utilities to purchase RECs as an alternate mechanism for meeting the RCPS. This action proposes engagement of the Louisiana Public Service Commission (LPSC), utilities, and stakeholders to develop and implement a RCPS and a statewide market for RECs. ***(Associated Submitted Action Proposals: 16, 56, 119, 145, 152, 162, 172)***

ACTION 1.2 Improve electric generation resource planning and procurement to streamline the retirement and replacement of energy resources

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / utilities / Governor's Office	Engage in Entergy Louisiana, LLC and Cleco Power LLC IRP Process in 2022	Encourage generation of renewable power

Integrated Resource Plans, or IRPs, are how utilities plan for future electric generation needs. IRPs identify future needs and different types of resources a utility can use to reliably serve customers in Louisiana. Over the next decade, Louisiana's electric utilities will be undergoing a rapid transition from predominantly fossil fuel generation to ~~more renewable resources (coupled with energy storage) and new, high-efficiency natural gas generation facilities necessary to ensure grid reliability~~ a low-carbon power generation mix driven in large part by deploying more renewable resources, while making other investments to ensure grid reliability. ~~Beyond the next decade, the federal government~~ Resource management and planning should also consider that all assets, some of which have 30-year lifespans, will likely ~~require 30-year assets~~need to be low- or no-carbon by 2050, further emphasizing the importance of planning now. Where appropriate, the electric utility industry should also complement planning for large base load power stations with smaller, more distributed generation facilities strategically located to enhance grid reliability and achieve emissions reductions. This action proposes working with the LPSC to~~:~~ evolve the IRP and regulatory process to: 1) accommodate the dynamic nature of the energy transition; 2) evaluate the costs and benefits of operating older generation facilities (including impacts to affordability); 3) examine the risk of early retirement or substantial retrofitting of new fossil fuel-based generation facilities due to future federal climate action; 4) expedite renewable energy procurement in a way that will improve competition, reduce ratepayer costs, and improve Louisiana's air quality, and (5) better incorporate distributed energy resources. ~~For example, when the Dolet Hills power station, one of Louisiana's few remaining coal-fired power plants, was closed in the fall of 2021, five years ahead of schedule, it was reported to save utility customers between $9 and $15 each month because of the lower cost of renewable power that would replace it.~~For example, when the Dolet Hills power station, Louisiana's first coal-fired power plant, was closed five years ahead of schedule in December 2021. The retirement was projected to save utility customers between $9 and $15 each month because of the lower cost of more efficient and cleaner power generation that would take its place. **(*Associated Submitted Action Proposals: 112, 114, 116, 117)***

ACTION 1.3 Strategically plan for the development of offshore wind power

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / utilities / industry / LED / DNR / universities	Prioritize offshore wind strategic planning for outreach, workforce. and impacts assessments	5 gigawatts of offshore wind generation by 2035

Given the availability of wind power as a potential energy resource from the Gulf of Mexico, Louisiana's advantage as a strong offshore energy producing state, and the economic development opportunity that wind power presents, Louisiana should continue collaboration across sectors and develop plans for the accelerated implementation of offshore wind power generation. This action proposes enactment of an offshore wind power generation goal of 5 gigawatts by 2035. This goal requires strategic collaboration across Louisiana state agencies and the federal government, transmission planning agencies, energy regulators, utilities, and the private sector, to take additional steps to advance the development of offshore wind power generation. To spur large-scale, responsible development of this energy resource, efforts should prioritize early and repeated stakeholder outreach, strategic planning for anticipated transmission and workforce needs, and improving the understanding of potential environmental and social impacts and opportunities to avoid, ~~or~~ address, or capitalize on them. ***(Associated Submitted Action Proposals: 61, 101)***

ACTION 1.4 Establish utility green tariffs

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / utilities	**Establish tariff offerings for renewable and clean power**	**Encourage purchasing of renewable power**

Green tariffs are optional programs offered by utilities that allow customers to purchase renewable or clean power from specific projects through a special utility tariff rate (fee structure). Opting to pay a green tariff for renewable or clean energy helps customers meet sustainability targets and helps promote the development of additional renewable or clean energy generation projects sooner. To maximize market participation and consumer choice, a green tariff program should provide separate renewable power and clean power tariff options. This action would include utilities working with the LPSC to establish tariff offerings for renewable and/or clean power for residential, commercial, industrial, non-profit, and governmental customers through a Utility Green Tariffs program. ***(Associated Submitted Action Proposals: 111, 118, 175)***

ACTION 1.5 Explore the role of Power Purchase Agreements and deregulating power generation in the energy transition

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / utilities / industry	**Understand implications of deregulated power generation**	**Encourage generation of renewable power**

Power Purchase Agreements (PPAs) are long-term contracts between customers and renewable energy developers that allow the purchase of renewable energy at certain volumes and prices. PPAs connect ~~R~~renewable energy developers, who design, permit, finance, install, operate, maintain, and own a renewable energy project with an electricity customer(s). Basic co-benefits of PPAs are two-fold: 1) customers that enter PPAs can avoid the up-front capital costs of installing a renewable energy system while still increasing access to renewable power; and 2) developers get revenue certainty that helps to finance the renewable energy project. ~~Physical PPAs require renewable energy developers and customers to be located within the same electricity market and provide for the physical transfer of electricity from the generator to the customer.~~ This action requests the LPSC to further review the benefits and costs of ~~physical~~ allowing PPAs and deregulated power generation as mechanisms to efficiently and expeditiously add renewable energy generation to the grid and make ~~electrification~~ no-carbon electricity more accessible to industrial facilities. Following this review, the PSC should understand and consider potential market-based mechanisms for effective competition in a deregulated environment. ***(Associated Submitted Action Proposals: 11, 47, 144)***

ACTION 1.6 Develop a regional long-range transmission infrastructure plan to meet Louisiana's transmission goal

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / utilities / MISO / SPP / DNR	Assess infrastructure needs across the state to plan for renewable connectivity	30% increased grid infrastructure by 2030 and 100% increase by 2050

Long-range transmission planning, which seeks to optimize regional transmission infrastructure investments over a 20-to-30-year planning horizon, ensures that the electricity grid can accommodate the changes occurring in the energy sector as Louisiana transitions to lower GHG-emitting sources (e.g., electrification, the growth of distributed generation, the retirement of aging or inefficient generation, addition of offshore wind, development of reliable and affordable energy storage) and strives to maintain affordability and reliable service during extreme weather events. Stronger regional transmission networks also allow for the optimized flow of power to and from producers within regions. The gap between ~~current~~ today's renewable electricity generation and availability and targets for 2035 ~~targets for renewable electricity generation indicates the necessity to rely on~~ highlights the importance of regional transmission infrastructure and planning ~~import renewable power that creates a system of longevity and continuity~~. Louisiana is an active participant in two regional transmission organizations, the Midcontinent Independent System Operator (MISO) and the Southwest Power Pool (SPP), through the LPSC, where states collaborate on and share infrastructure to support regional transmission. ~~Recognizing the important role of long-range transmission planning for achieving GHG emissions reduction goals and maintaining reliable service during extreme weather events, t~~This action recommends the Department of Natural Resources (DNR) Energy Office join with the LPSC, MISO, and SPP to develop a strategic plan for the buildout of Louisiana's grid and transmission infrastructure to meet a near-term goal of a 30% increase of capacity in MW-miles by 2030 and a long-term goal of 100% increase of capacity in MW-miles by 2050. This action should begin in the short-term with an understanding of where and how much electricity is most needed across the state, with particular attention to industrial clusters and power facilities. From this baseline, the LPSC, MISO, and SPP can plan for and ensure connectivity across the MISO and SPP infrastructure that supports Louisiana's renewable power needs, emphasized in the "Clean Energy Transition" and "Industrial Decarbonization" Sections. ***(Associated Submitted Action Proposals: 122, 123, 165)***

ACTION 1.7 Adopt and develop measures to meet an energy storage target

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / utilities / DNR Office of Energy	Solicit funds for energy storage pilot projects	100 megawatts of energy storage by 2030

Energy storage is a necessary component of Louisiana's energy transition infrastructure to ensure grid reliability and resilience and to help meet energy demand. Storage enables larger quantities of and greater reliance on renewable energy sources by reducing the intermittency problems of solar and wind power generation. Storage reserves electricity generated by renewables when the sun is shining or wind is blowing to be "dispatched" later when those sources are not producing. ~~storing intermittent solar and wind power generation and "dispatching" them when the renewable energy is not being generated.~~ Many states, including Virginia and Nevada, have enacted energy storage targets and a streamlined regulatory environment that incentivize energy storage. This action proposes the LPSC evaluate the role that energy storage can play in increasing reliability and resilience and enabling the deployment of renewable energy. This action proposes working with utilities and DNR's ~~Office of~~ State Energy Office to develop energy storage pilot projects and

consider a goal of 1000 megawatts by 2030 and setting a higher target for 2050 to ensure continued progress towards a reliable, clean power grid. ***(Associated Submitted Action Proposals: 174)***

ACTION 1.8 Publish "climate rankings" for electric utilities within the statewide GHG monitoring program to increase public awareness, transparency, and accountability

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / utilities / DEQ	**Assess gaps and synthesize existing data on generation**	**Encourage generation of renewable power**

Customers of electric utilities should have easy, understandable access to information about where and how their electricity is produced and how ~~that~~ the mixture of energy production sources changes over time. This action proposes engaging with the LPSC, regional transmission organizations, the Department of Environmental Quality (DEQ), and utilities to develop a regularly updated "report card" that ~~synthesizes~~ produces valid data on the diversity of a utility's generation portfolio. This should include load, mixture of energy production sources, and renewables forecasting, as well as carbon dioxide (CO_2) and other emissions, to incorporate into DEQ's statewide GHG monitoring program. Much of this data is available, so actions to compile and synthesize data should begin immediately, noting any gaps in monitoring data and capacity. DEQ should work with utilities to fill ~~monitoring~~ data gaps and ensure the report card is comprehensive~~. of this energy source mix and emissions profile.~~ Updates to this report card should be completed every ~~two~~ year~~s~~ to incentivize, track, and ~~reward~~ recognize decarbonization progress by ~~of~~ utilities. In the medium and long term, a climate scorecard should be developed to compare data and trends across utilities around the state and the nation, develop decarbonization challenges across utilities, and promote leadership within the state. ***(Associated Submitted Action Proposals: 108, 115)***

STRATEGY 2. Increase access to and deployment of distributed energy resources

In addition to utility-scale actions, investments in distributed renewable resources—local generation of electricity at or near where it will be used—can accelerate the deployment of renewable technologies and projects in Louisiana. Actions under this strategy provide a range of mechanisms to support more affordable access to and financing for ~~of~~ distributed renewable resources for residential, community-based, commercial, institutional, and industrial consumers.

Highlights of how this strategy can realize benefits for Louisiana:

- *Economy and Jobs:* Investments in distributed renewable projects can support the growth of local businesses and jobs within the solar, wind, and other renewable industries in Louisiana.
- *Energy Affordability:* Distributed renewable generation provides an opportunity for energy customers to control their energy supply, reduce their energy costs, and in some cases profit from their surplus energy production. Additional attention in policy design and implementation of actions will be necessary to ensure that programs are accessible to low-income residents, including renters. Models like community-owned solar can expand access to the benefits of distributed renewable projects for all users.
- *Community Resilience:* Local renewable electricity generation, when combined with storage, can provide backup power to local businesses, residents, and community facilities during a grid outage, such as after a storm. This can ensure the continued provision of essential services to communities.
- *Protecting the Environment:* Distributed energy generation reduces the power generation needed from large-scale solar or wind farms, potentially reducing the amount of land (or offshore acreage) that would need to be converted from natural areas.

ACTION 2.1 Authorize tax incentives for residential, commercial, and community-based renewable energy installation and storage

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Legislature	**Reinstate incentives for renewable installation and storage**	**Encourage purchasing of renewable power**

Financial incentives for renewable energy installation and storage at household and commercial scales, particularly solar (electricity and water heating), are important for ensuring equitable access to renewable energy across Louisiana. Similar tax incentives have been employed in the past and this action would reinstate and update that program to provide a tax rebate (e.g., 30% or number of kW installed) based on the cost of installation with a cap per household/project and an annual budget limit for the state. The program would prioritize low-income households. This action would also work to implement tax incentives or credits to promote and support community-owned solar installations. Community solar refers to local solar facilities shared by multiple community subscribers who receive credit on their electricity bills for their share of the power produced. The primary purpose of community solar is to allow members of a community the opportunity to share the benefits of solar power even if they cannot (renters, or those with homes or roofs unsuitable for solar for example) or prefer not to install solar panels on their property. If this action is implemented, it will be important to ensure that this program is accessible for low- and moderate-income homeowners through mechanisms such as "carve-outs.", ~~,~~ availability for community solar and other non-ownership models, pairing with other incentives, targeted messaging, and outreach. ***(Associated Submitted Action Proposals: 113, 147, 126)***

ACTION 2.2 Review net metering and crediting policies for on-site and community solar energy system owners and participants

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC	Review net metering policies	Account for value of distributed solar energy generation

Many on-site (e.g., rooftop) solar energy system owners produce more electricity than they consume. Billing mechanisms can provide these customers with credit for the energy they generate or add to the grid. Virtual net metering applies similarly to the electricity bills of subscribers of community solar projects. ~~When a solar energy system is built at a school, grocery store, or other consolidated site in a community, residents can choose to share that solar system through partial ownership or "subscription."~~ Net metering helps financially justify the cost of solar energy system installation thereby increasing demand for solar energy and creating jobs for those in the solar industry. In PSC jurisdictions, owners of systems installed prior to 2020 are grandfathered into a full retail credit net-metering schedule until the end of 2034, while owners of systems installed in or after 2020 only receive credit for the utility's "avoided cost" when selling excess energy back to the grid. This action proposes working with the LPSC to review its prior ruling on net metering for solar energy system owners and community solar participants to ensure customer rate schedules are equitable while fully accounting for the value of the distributed solar energy generation. ***(Associated Submitted Action Proposals: 57, 126, 164)***

ACTION 2.3 Strategically foster the development of resilient microgrids and dispatchable batteries

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
FEMA / GOHSEP / Louisiana National Guard	Plan and implement microgrids and dispatchable battery units	Speed post-disaster recovery and resilience

Microgrids are localized "islands" of electricity generation that can be isolated from the larger macrogrid to supply power. Dispatchable battery units can likewise supply power in response to outages. With the ability to disconnect and operate independently, microgrid systems can provide for grid resilience, mitigate disturbances by ~~natural~~ disasters, and allow for faster ~~response~~ system response and recovery. This action requires collaboration across the U.S. Federal Emergency Management Agency (FEMA), the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), Louisiana National Guard, the LPSC, and local stakeholders to plan for the deployment and implementation of microgrids and dispatchable battery units for businesses and communities in order to build resilience against increasingly ~~natural~~ frequent disasters. With near-term federal funding available through the Infrastructure Investment and Jobs Act, this action recommends immediate implementation through pilot projects for strategic assets with a goal of broader deployment of microgrids and dispatchable batteries or other energy storage devices to improve the resilience of at-risk communities over the long-term. ***(Associated Submitted Action Proposals: 176)***

ACTION 2.4 Evaluate an Emission Reduction Generation and Supply (ERGS) program

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC	Determine best mechanisms for third-party generation to sell energy back to the grid	Encourage generation of renewable power

Maximizing the ~~usefulness of the~~ simultaneous cogeneration of electricity and heat from~~or~~ renewable sources at~~by~~ industrial facilities can encourage more efficient onsite energy generation for large consumers, reduce energy waste, and lower the demand on the energy grid. This cogeneration also has potential to provide ~~while potentially providing~~ energy for additional uses or users. This action ~~would~~ requests that the LPSC evaluate the creation of an Emission Reduction Generation and Supply (ERGS) program to further incentivize cogeneration. The proposed program would allow ~~in which~~ industry or other third-party energy generation created from emission-reducing sources (e.g., CHP, battery storage, on-site renewable energy generation, waste-heat generation) ~~could~~ to be automatically sold back to the grid at retail rates on an as available basis without classifying the energy resource owner as a regulated electric public utility. The program should evaluate making this cogenerated power available to non-adjacent locations that are under common or affiliate ownership with the purchase of transmission or distribution services from local utilities. ~~, or made available to nearby facilities through privately-owned transmission infrastructure without classifying the energy resource owner as a regulated electric public utility.~~ This action would evaluate the benefits and costs of incentivizing industrial customers to build or utilize larger-scale reduced-emissions energy resources by allowing them to share the electricity produced. ***(Associated Submitted Action Proposals: 43, 52, 89, 124, 160)***

Industrial Decarbonization

Industrial decarbonization refers to avoiding the combustion of fossil fuels to reduce emissions from the industrial process chain. Industry is Louisiana's largest sector of emissions, and facilities that have been permitted but not yet built could potentially add 100MMT CO_2e to industrial emissions if no action is taken, –making it critical to develop concrete steps towards a less energy-intensive industry that partners with industry in this transition. The industrial sector accounts for a disproportionately large share of GHG emissions in Louisiana, as compared to other states, due to demand for products produced in Louisiana that are then exported and sold to the rest of the nation and world. Many opportunities exist to decarbonize this sector, which are possible through efficiency, electrification, fuel switching, CCUS, and reduced carbon intensity of materials, which is shown across all four strategies of this section.

- Strategy 3: Monitor, inventory, certify, and support industrial decarbonization
- Strategy 4: Improve efficiencies in and modernization of industrial processes and facilities
- Strategy 5: Accelerate industrial electrification, switching to low- or no-carbon fuels and low- or no-carbon feedstocks
- Strategy 6: Promote reduced-carbon materials

STRATEGY 3. Monitor, inventory, certify, and support industrial decarbonization

Industrial sector emissions are Louisiana's largest contributing source of GHG emissions, accounting for over 65% of total state GHG emissions in 2018 based on the 2021 Greenhouse Gas Inventory. An accurate baseline understanding of Louisiana's industrial emissions is a critical first step towards measuring, certifying, supporting, and accounting for reductions from the industrial sector. Baseline information, with robust and reliable monitoring efforts, will allow for comprehensive tracking of Louisiana's emissions across a diverse and complex industrial profile and ensure accountability and enforcement ~~in~~ for all reductions.

Highlights of how this strategy can realize benefits for Louisiana:

- *Public Confidence:* Tracking and monitoring industrial emissions alongside transparent communication of emissions reductions to the people of Louisiana are critical for ensuring confidence in this climate action plan.
- *Human and Environmental Health:* Monitoring programs that track GHG emissions can also be used to monitor other toxic and potentially hazardous emissions. Improving Louisiana's understanding of all industrial emissions will help inform and mitigate potential impacts to communities and the natural environment.
- *Maximizing Future Success:* Monitoring and inventorying industrial emissions allows the efficacy and impacts of all actions to reduce these emissions to be evaluated and improved as the plan is implemented over time.

ACTION 3.1 Require ~~self-reporting~~ carbon intensity audits and bolster emissions ~~audits~~ reporting from industrial facilities to be incorporated into the statewide GHG monitoring program

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DEQ / EPA / Industry	~~Compile, calibrate, and assess gaps of existing data from facilities~~Accurately account for facility-level emissions and product carbon intensity	Provide facility-specific accountability in emission reduction

The U.S. Environmental Protection Agency (EPA) currently administers a Greenhouse Gas Reporting Program, which generally requires facilities that emit 25,000 tons of GHGs per year to report their emissions. To ~~establish~~ expand ~~a~~ the baseline reporting of current emissions on a facility-by-facility basis, this action proposes that DEQ work with EPA to identify opportunities to obtain GHG emissions data from smaller facilities while not unduly burdening those facilities. In order to effectuate this action, the Louisiana DEQ may also need to compile, calibrate, and verify self-reported emissions data from smaller facilities not currently required to report emissions to the EPA under its Greenhouse Gas Reporting Program. This data should be made publicly available as a component of the broader DEQ GHG Monitoring Program, as described in Action 28.1.

Alongside emissions reporting, DEQ should utilize nationally and internationally recognized methodologies to identify and establish a baseline of carbon intensity values for energy intensive products that are manufactured in Louisiana. Carbon intensity is frequently measured through life-cycle assessments (LCAs), which assess environmental impacts associated with all the stages of a product's life cycle. With Louisiana's large manufacturing industry, manufacturers would be able to track carbon intensity according to metrics established by DEQ, based on lifecycle assessments of their products.

Carbon intensity audits will allow for and encourage Louisiana manufacturers to produce and validate lower-carbon products and to remain competitive in global markets and upon implementation of the Buy Clean Louisiana policy (Action 6.1).~~mandatory, self-reported emissions and carbon intensity audits from all industrial facilities and a repository in which state-wide data can be stored and made publicly available. This database should be a component of the broader DEQ GHG Monitoring Program, described in Action 28.1, and build upon existing publicly available datasets generated by the U.S. Environmental Protection Agency (EPA) Greenhouse Gas Reporting Program, Title V Clean Air Act Permit Information, and others. Under this action, the Louisiana DEQ should compile and calibrate existing data, ensure all facilities submit reports, and update the GHG monitoring database annually with emissions and intensity information for all facilities.~~ Immediate implementation is recommended so that the Governor's Office, state agencies, federal partners, industry, utilities, and environmental stakeholders are able to ensure continual progress towards emission reduction in this sector. ***(Associated Submitted Action Proposals: 51, 108, 140)***

ACTION 3.2 Develop an Industry Certification Program for GHG emission reduction activities

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DEQ / EPA / Industry	Develop framework for facility-level GHG reducing plans	Provide facility-specific support in emission reduction

With a sufficient baseline of industrial emissions and a monitoring program to track reduction, Louisiana can creatively develop approaches that mitigate emissions and accommodate varying types, sizes, and operations of industries. To offer such flexibility in implementation and reward decarbonization, this action establishes a voluntary Industry Certification Program in DEQ that incentivize industries to implement GHG reduction measures. This program would require participating industries to propose and implement site-specific GHG emission reduction plans, tailored to their industry and locational needs on an achievable timeline towards net zero by 2050. Plans should then be evaluated and certified by DEQ using a common metric to evaluate and track success, updated by annual site visits and certification renewals.

Industries will only be required to pay a small participation fee, but they can benefit in many ways: recognition in emission reduction, use of the program's promotional material and monitoring capability, advantages in government procurement, potential grants for GHG-reducing facility improvements, and information sharing across industry peers. The participation fee Industry Certification Program would cover costs to increase agency capacity, allowing the program to become self-funding and income-generating. Similar programs have been successfully implemented in California and Texas alongside the EPA Natural Gas STAR Program. Medium-term implementation of this action is most beneficial, to ensure a firm baseline of emissions is established first and drives the certification program. ***(Associated Submitted Action Proposals: 62)***

ACTION 3.3 Advocate for a national carbon price and explore joining a multi-state carbon pricing system to advance GHG emissions reduction and direct proceeds toward the advancement of strategies in the Louisiana Climate Action Plan

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DEQ / Legislature / Governor's Office	Identify carbon pricing mechanism best suited for Louisiana	Provide facility-specific accountability in emission reduction

As inherent in its name, a carbon price applies the external cost of GHG emissions (e.g., public or social costs for damage to crops from drought, community loss from flooding, etc.) to the source of emissions through a price, intended to shift

the burden for damage of GHG emissions back to those who are responsible for it and who can avoid it. Carbon price can either encourage emitters to shift activities to lower emissions or continue emitting and pay for it. Multiple mechanisms can be used for carbon pricing, with cap-and-trade and carbon tax as leading methods, applied economy-wide or to a specific emissions sector. Cap-and-trade programs establish a declining limit on major sources of GHG emissions (a mandated "cap") and creates a powerful economic incentive for investment in cleaner, more efficient technologies. Under these programs, emissions allowances are purchased and sold by emitting entities (creating a market to "trade" allowances). Alternatively, carbon tax is a more straightforward system, where government sets a price that emitters pay for each ton of GHG emissions emitted. These mechanisms are used by states, regions, and nations, designed to support ~~intended outcomes, needed flexibility, and political feasibility~~and incentivize GHG reductions.

This action tasks Louisiana's DEQ to explore joining a multi-state carbon pricing system. Alongside exploring and joining a regional system, this action tasks state leaders to continue advocating for a national carbon pricing system, where the federal government sets a national price on carbon to avoid carbon leakage across states. Regardless of the system pursued, this action directs proceeds from the sales of emissions allowances be used to support incentive programs for the ~~equitable~~ safe and responsible expansion of renewable and clean energy deployment, alongside providing funds to reduce barriers to low-income electric vehicle adoption, weatherization and energy efficiency programs, workforce transition, climate change adaptation, and other goals established by the Louisiana Climate Action Plan. ***(Associated Submitted Action Proposals: 8, 48, 53, 173)***

ACTION 3.4 Develop and enforce a Net Zero Industry Standard ~~a comprehensive strategy to reduce industrial GHG emissions~~

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DEQ / DNR	Develop ~~an implementation strategy for this Section~~a Net Zero Industry Standard	Ensure ~~coordinated implementation of industrial decarbonization~~net zero for industry by 2050

Industrial sector actions require intentional engagement and support to ensure GHG-reducing regulations, incentives, and programs are implementable for a wide range of facility sizes, types, and operations. With many ~~solutions~~ actions and approaches set forth in this section, this action tasks DEQ and DNR jointly to develop a Net Zero Industry Standard, a statewide strategy to achieve net zero emissions for industry by 2050 to implement actions of this section, to realize ~~enforce~~ industrial emissions reductions from new and existing sources, to align permitting (Action 26.3, Action 26.4) with net zero, ~~prevent waste from new and existing sources,~~ and to attract clean energy industry to the state. DEQ, with its monitoring and regulatory authority, and DNR, with its permitting authority and energy office, are central implementers of monitoring, inventorying, certifying, and supporting industrial decarbonization. This cooperative endeavor should outline a strategic path forward to implement actions of Louisiana's Climate Action Plan and to monitor and reduce industrial emissions. Alongside ensuring agency collaboration and role in implementation, this framework should create opportunities for engagement with other state agencies, federal partners, industry, and environmental advocates to ensure a comprehensive approach is developed, safely implemented, and provides a tool for accountability and clear mechanism of enforcement. Particularly, this effort should also include specific outreach and engagement with Louisiana's top emitters to develop targeted measures to decarbonize their facilities. DEQ and DNR should provide updates to and receive feedback from the CITF on development, implementation, and efficacy of this framework to attain net zero by 2050. DEQ and DNR should also identify any additional statutory authority needed to accomplish a Net Zero Industry Standard. Alongside the GHG monitoring program, this framework would benefit the Climate Action Plan most through immediate implementation to set Louisiana on a trajectory to address its largest emission sector and to best support major emitters of the sector. ***(Associated Submitted Action Proposals: N/A)***

STRATEGY 4. Improve efficiencies in and modernization of industrial processes and facilities

Improving the efficiency of industrial processes is the quickest, simplest way to reduce industrial energy demand and corresponding GHG emissions. Efficiency can also lower energy cost, mitigate risk, increase competitiveness, and make electrification more feasible. Efficiency approaches can encompass internal operations, supply chains, products and services, and cross-cutting issues across a variety of types and sizes of industry. Actions under this strategy are directed at increasing efficiency in modernizing existing and in designing new facilities via implementation of standards and direct engagement with energy users and manufacturers.

Highlights of how this strategy can realize benefits for Louisiana:

- *Timely Implementation*: Increasing industrial efficiency can occur now. Technologies are currently available to increase efficiencies in the near-term.
- *Quality Improvements*: Increasing energy efficiency can improve other important aspects of industrial operation including product quality, worker health and safety, and environmental performance.
- *Economy and Jobs:* Investment in the development and deployment of new technologies to improve efficiency creates jobs in research and development (R&D) and installation. The implementation of energy efficiency projects and good energy management practices can save energy and reduce costs for companies, thereby increasing industrial competitiveness.

ACTION 4.1 Set Industry Efficiency Standards

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR	**Pursue rulemaking for implementation of standard**	**Reduce energy intensity of industry**

Mandatory standards are necessary to signal a commitment to efficiency. This action proposes that the state further energy efficiency through Industry Efficiency Standards. To ensure that the benefits of efficiency are realized, DNR should immediately pursue Industry Efficiency Standards through rulemaking, based on total building or structure performance. Near- and long-term standards will ensure efficiency remains a priority even after appropriate phase-in measures and near-term goals are met. Agency resources must be allocated to ensure accountability that standards are followed and goals are met across facilities. ***(Associated Submitted Action Proposals: N/A. Referenced Resources: 1)***

ACTION 4.2 Develop and implement a Strategic Energy Management Program

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR / LSU-IAC	**Assess needed support for implementation of Action 4.1**	**Support reduced energy intensity of industry**

Education, technical assistance, and financial incentives must accompany mandatory standards to ensure their widespread adoption and success. Strategic Energy Management (SEM) encourages efficiency through direct engagement with manufacturers to identify sources of significant energy use, implement efficiency measures, and track progress toward implementing energy efficiency standards. This action proposes the establishment of an SEM Program in Louisiana's DNR Energy Office that would ensure continual energy improvement is integrated into the culture of facility management. The SEM should partner closely with and expand upon existing work of Industrial Assessment Centers (IACs), federally funded partnerships with local universities to identify energy efficiency improvements for small and medium-sized manufacturers. Louisiana's IAC is a team of Louisiana State University (LSU) faculty and students that provide no-cost assessments to small and medium-sized U.S. manufacturers to identify potential cost savings from energy efficiency improvements, waste minimization, pollution prevention, and productivity improvement. Through an SEM Program, state agencies, industries, and universities should discuss and address concerns, limitations, and feasibility of various methods to improve efficiencies, building on experience and knowledge of the LSU IAC. The SEM program may fund pilot projects and conduct studies on carbon intensity, life cycle accounting, competitiveness, resilience, and the impacts of energy-intensive industry for various processes to guide decisions, track progress, and set further standards. Alongside efficiency standards, the SEM is immediately implementable and would ensure successful adoption of efficiency standards. ***(Associated Submitted Action Proposals: n/a. Referenced Resources: 1, 2)***

STRATEGY 5. Accelerate industrial electrification, switching to low- or no-carbon fuels and low- or no-carbon feedstocks

The fossil-derived energy used to power Louisiana's industrial sector is the state's largest source of GHG emissions. Moving this energy demand to ~~zero~~no-carbon electricity and fuels is the most powerful action that can be taken to mitigate Louisiana's emissions and ensure Louisiana remains a global industry leader in a net-zero future. Some electrification technology is readily available and deployable across various industrial processes, particularly for those of low- and medium-heat and for green hydrogen in high-heat processes. However, decarbonizing industrial processes is a newer challenge with few blueprints to follow. Several actions under this strategy highlight the importance of research and development and pilot projects to better understand how electrification, low- and no-carbon fuels, and carbon capture, use, and storage (CCUS) can best be deployed in Louisiana's industrial facilities.

Highlights of how this strategy can realize benefits for Louisiana:

- *Public Confidence:* Tackling Louisiana's largest emissions sources head-on will inspire additional action at the local and facility levels. Leadership from the state and industry, showing that Louisiana is serious about mitigating its hardest-to-abate emissions, will increase confidence in the state's industrial future and commitment to the clean energy transition.
- *Economy and Jobs:* Investments in electrification and industrial fuel-switching will create jobs in retrofit and new facility projects, piloting technology and approaches that can be used on industrial facilities around the world with Louisiana leading the way.
- *Human and Environmental Health:* Reducing fossil energy combustion in and near industrial facilities can reduce not just GHG emissions, but other pollutants as well, improving the health of fenceline communities and benefitting the environment.

ACTION 5.1 Accelerate electrification of industrial processes and equipment through pilot projects, incentives, and requirements

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LED / DNR / PSC / Governor's Office / Industry	**Invest in mechanisms to accelerate industrial electrification**	**Abate industry emissions through electrification to the extent practicable**

Technology currently exists to electrify many types of systems and processes within industrial facilities, but the economic and feasibility and scalability of this technology has not been widely demonstrated in Louisiana. This action proposes the development of pilot projects to electrify systems within Louisiana industrial facilities (e.g., building systems and motors) to demonstrate the potential for more widespread implementation. Electric furnaces for temperatures above 350°C are also ripe for pilot projects, as they are in development but not yet technologically mature for industrial use.

Alongside demonstration projects, incentives will meaningfully drive changes in industrial investment. This action tasks Louisiana to advocate for a federal industrial-scale electrification incentive~~ize~~, similar to the 45Q tax credit for carbon capture and storage (CCS). Such large-scale, near-term federal and state investment will drive demand for electrification,

facilitating accelerated progress towards industrial decarbonization and grid transformation. Any incentives should be based on criteria that prioritize communities most closely impacted by industry and where explicit reduction co-benefits of replacement technology have been identified and will be most quickly realized. Alongside federal and state investment, this action tasks Louisiana Economic Development (LED) to work with DNR and LPSC to begin developing regulatory requirements for industrial transformation to electrification by 2050. Demonstration projects and incentives, alongside new regulation and enforcement, are all meaningful drivers of innovation for industrial-scale electrification. ***(Associated Submitted Action Proposals: 29, 63)***

ACTION 5.2 Promote low-carbon alternative fuels and feedstocks for petrochemical industrial processes

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR / US-DOE / Industry	**Invest in research and demonstration projects to accelerate fuel- and feedstock-switching**	**Abate heavy industry emissions through alternative feedstocks and fuels to the extent practicable**

Industrial feedstocks (raw materials used to supply a manufacturing process) have traditionally been petroleum, natural gas, and their derivatives. Natural gas is also widely combusted in Louisiana to achieve high temperatures for chemical manufacturing and petroleum refining. Louisiana is one of the largest producers of bulk chemicals, like ammonia, in the country, and chemical manufacturing accounts for over half of Louisiana's industrial GHG emissions. As well as being a large producer of bulk chemicals, Louisiana also utilizes bulk chemicals as intermediate products to create end products like plastic containers and fertilizers. To reduce emissions from chemicals production and ~~refining~~ petroleum manufacturing, low- and no-carbon hydrogen as well as captured CO_2 can replace carbon-intensive feedstocks. Low-carbon fuels can also replace carbon intensive fuels that manufacturers currently rely on to achieve the high temperatures needed in many industrial processes. This action proposes investment in research, development, and demonstration of low- and no-carbon fuels and feedstocks, such as ~~clean~~ low- and no-carbon hydrogen, to complement industrial electrification for a comprehensive decarbonization strategy for Louisiana's heavy chemical industry. To ensure near- and long-term ambition to abate emissions along the entire fuel production chain, this action sets a target of producing 100% low- and no-carbon hydrogen for use in industrial processes by 2050. The DNR Energy Office should partner with the U.S. Department of Energy (DOE) to solicit funding for Louisiana to lead research, development, and demonstration in this area and become a ~~clean~~ low- and no-carbon hydrogen hub for the nation. As electrified equipment becomes more available in the coming years, this action also proposes Louisiana lead in piloting and deploying ~~clean~~ low- and no-carbon technologies. ***(Associated Submitted Action Proposals: 6, 12, 51, 107, 125. Referenced Resources: 1)***

ACTION 5.3 Support the safe and responsible deployment of carbon capture, utilization, and storage for high-intensity and hard-to-abate emissions

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR / US-DOE / Industry / Communities	**Invest in research for siting and impact assessments of CCUS buildout**	**Abate remaining high-intensity emissions through carbon capture and storage**

CCUS is a suite of technologies that can play a significant role in GHG emission reduction in combination with other industrial decarbonization strategies. Carbon capture can use a variety of techniques to remove emissions from industrial and power production operations pre- and post-combustion. With expansive geologic storage potential, highly concentrated industrial corridors, and a trained workforce, Louisiana has potential for deployment of this technology and infrastructure. CCUS ~~has~~ is anticipated to play a critical role ~~to play~~ in decarbonizing the global economy by addressing

high-intensity and hard-to-abate emissions that will be necessary to reach net zero. This is particularly true in the industrial sector, where high temperature processes cannot be readily transitioned to electrification or low-carbon alternatives and where process emissions from chemical reactions are unavoidable except with CCUS. However, Louisiana also needs to be assured that the deployment of CCUS technologies in the state be pursued in a safe and responsible manner that does not negatively impact communities, ecosystems, and cultural resources.

This action proposes that the state continue to work with federal and state partners, industry, and communities to determine the feasibility and impacts of carbon capture and transport infrastructure and buildout (see Action 26.2 for more detail), to identify potential sites for safe and responsible carbon capture storage, and to ~~identify~~ establish a regulatory and legal framework that supports responsible deployment of CCUS technologies.~~, and to determine impacts of capture and transport infrastructure buildout.~~ While the overall impacts of CCUS deployment are expected to be positive as they relate to air quality, further assessment, quantification, and engagement of local communities is needed to fully understand potential impacts of CCUS on local criteria air pollutants and other emissions resulting from carbon capture retrofits at industrial facilities. These efforts should result in responsible CCUS projects that address cumulative pollution and incorporate environmental justice and equity concerns into siting and decision making. Further actions under Strategy 26 outline specific areas for impact analysis needed in the near-term prior to permitting and deployment of infrastructure. ***(Associated Submitted Action Proposals: 7, 45, 49, 74, 155)***

ACTION 5.4 Invest in research for utilizations of captured carbon and life cycle analyses to understand their overall impact

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Universities	**Solicit funding to understand utilization techniques**	**Recycle emissions through utilization of captured carbon**

The capture and use of CO_2 to create valuable products (CCUS) has potential to lower the net costs of reducing emissions while removing CO_2 from the atmosphere. This process of utilization refers to the use of CO_2 directly or as a feedstock in industrial or chemical processes to produce carbon-containing products that generate economic value. Utilization technologies of CCUS are still nascent in form and barriers to implementation remain, so more funding is needed to research and pilot various techniques. This action proposes that Louisiana universities solicit funding for studies that more comprehensively understand various utilization techniques and their applicability and feasibility to reduce emissions from Louisiana industries. Research should begin in the short-term to influence and inform medium- and long-term implementation. ***(Associated Submitted Action Proposals: n/a)***

Action 5.5 Develop Industrial Cluster Decarbonization Plans to plan for and direct facility-level investment

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
US-DOE / DEQ / DNR / PSC / Utilities / Industry / Communities	**Strategically plan decarbonization of industrial clusters**	**Provide cluster-specific support in emission reduction**

Louisiana is home to three major “industrial clusters,” geographic areas where industries are co-located and share resources. Though they are major emission sources, clusters provide opportunities for deployment of decarbonization technologies at scale, sharing of risks and resources of their location, and aggregation and optimization of energy demand. This action proposes the U.S. DOE, DEQ, and DNR Energy Office partner with utilities, the LPSC, industrial

clusters, and nearby communities to develop site-specific Industrial Cluster Decarbonization Plans ("Cluster Plans") that utilize industry co-location to develop facility-level decarbonization measures. Cluster Plans should be led by companies in the respective clusters with leadership from the U.S. DOE, DEQ, DNR Energy Office, and neighboring communities ~~and~~ to focus on transmission buildout, grid updates, and storage capacity to facilitate industrial-scale electrification~~,~~; ~~alongside~~ to develop~~ment~~ and utiliz~~eation of~~ hydrogen and CCS hubs; and to meaningfully consider concerns of nearby communities. State leadership should build upon initiative taken by state agencies in Action 3.4, with federal engagement regarding funding opportunities and pilot projects. Since success is dependent upon collaboration and unified action across all stakeholders, development and adoption of Cluster Plans ~~allows~~ should allow industry to tailor action to their specific needs and locations, while also meaningfully engaging and addressing the needs of surrounding communities. Action by facilities in major industrial clusters is central in meaningful reduction of industrial emissions and grid transformation, so results of this action should further those of this strategy and of the "Clean Energy Transition" section. ***(Associated Submitted Action Proposals: 29, 71, 73, 139)***

STRATEGY 6. Promote reduced-carbon materials

The lifecycle emissions and embodied carbon in fuels, construction materials, and other products are an easily overlooked source of GHG emissions that can be mitigated. Using the government's power of the purse to encourage and incentivize selection of materials and products created through low~~-er~~ carbon intensity processes is a powerful tool for building cleaner while creating a stronger market for low~~er~~ carbon products. Actions under this strategy aim to address material sourcing in a systematic approach, from public construction projects to household recycling, to reduce Louisiana's reliance on the use of higher carbon intensity products.

Highlights of how this strategy can realize benefits for Louisiana:

- *Economy and Jobs:* An understanding of the GHG emissions from materials production and supply chains can help state and federal entities make better choices when investing in construction projects. Increased government demand for lower carbon alternatives, with requirements to source from within the U.S., will spur economic growth and innovation to meet new requirements.
- *Community Engagement and Environmental Stewardship:* State and local programs that consider the life cycle of products can serve as an entry point for greater public engagement in climate action. Commitment from the state and private sector to identify reuse opportunities for waste streams can inspire individual action to continue waste reduction.

ACTION 6.1 Develop a "Buy Clean Louisiana" policy for procurement of materials with lower carbon footprints for use in public construction projects

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA	**Secure green vendors through procurement practices**	**Reduce GHG footprint of state government while growing market for clean and green products**

Adoption of a "Buy Clean Louisiana" policy utilizes procurement to create market shifts and incentivize the use of building materials (e.g., concrete and steel) manufactured through less~~lower~~ carbon intensive~~intensity~~ processes to reduce the GHG emission footprint of construction. This action, spurred by Louisiana's Division of Administration (DOA), would require all state agencies to consider embodied carbon emissions (all CO_2 emitted in producing materials) of industrial products when contracting for state infrastructure and non-infrastructure projects, which would be assisted through carbon intensity audits of Action 3.1. Securing green vendors through procurement is immediately implementable through adjusting procurement procedures of DOA. However, incentivizing use of green vendors through weighted scoring criteria will require~~s~~ legislative action that should be expedited ~~worked towards~~. Buy Clean has been pursued by other states, with programs in development for Texas, Colorado, New York, Oregon, Minnesota, Connecticut, New Jersey, and Washington, and one established in California. ***(Associated Submitted Action Proposals: 135)***

ACTION 6.2 Explore how circular economy principles can be applied to lifecycles of products created and used in Louisiana

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DEQ / Waste Management Entities / NGOs / Universities	Invest in pilot projects to reduce lifecycle emissions of products	Minimize wasted energy through circular principles

A circular economy is a systemic approach to economic development based on understanding of product lifecycles. Circular economies are designed to benefit businesses, society, and the environment while promoting zero waste – where every material, after use, becomes the feedstock for another use. Reducing GHG emissions by implementing material waste reduction programs, providing incentives for recycling, and investing in new technologies that consider the "lifecycle" of material products (e.g., plastics) are important actions to consider when reducing overall wasted energy. This action, coordinated across DEQ, waste management entities, non-governmental organizations (NGOs), and private industry, tasks university partners with reviewing opportunities to increase efficiency in recycling practices, exploring possible incentives for industrial use of recycled materials, and identifying other opportunities for the productive reuse of waste materials in Louisiana. Louisiana universities should then work with state agencies and manufacturers involved in the promotion of exports of goods and materials manufactured in Louisiana to develop specific supply chain opportunities for the application of circular economy principles. ***(Associated Submitted Action Proposals: 72, 82, 85)***

Actively Managed Methane Emissions

Methane is more than twenty-five times as potent as carbon dioxide at trapping heat in the atmosphere, which makes it important to actively mitigate the highest sources of methane. Though methane is present in many sectors and throughout other sections ~~of the action portfolio~~, methane is addressed separately here to emphasize potential to mitigate oil and gas infrastructure emissions through short-term action. Increased resources for decommissioning legacy infrastructure paired with monitoring and regulation on oil and gas infrastructure are significant strategies required to manage methane emissions.

- Strategy 7: Increase and mobilize resources for decommissioning legacy oil and gas infrastructure
- Strategy 8: Monitor and regulate methane emissions

STRATEGY 7. Increase and mobilize resources for decommissioning legacy oil and gas infrastructure

Charting a course for Louisiana's clean energy transition must address the persistent and complex challenge of methane emitted from oil and gas infrastructure, particularly orphaned wells. Orphaned wells are abandoned oil and gas wells for which no one ~~is~~ can be identified as a responsible party or where the responsible party has failed to maintain the infrastructure. Management of this legacy and inactive infrastructure presents a unique challenge since legal responsibility and potential safety may shift over time. Without steps that tighten active enforcement and make available additional resources to adequately manage these sites, methane leakage from legacy infrastructure will continue to impose an economic, environmental, and public health toll on surrounding communities. Actions under this strategy aim to address legacy infrastructure through tightening regulations and enforcement at the state level while aligning with near-term federal funding opportunities.

Highlights of how this strategy can realize benefits for Louisiana:

- *Economy, Jobs, and Education:* Investment of funds specifically for worker training and retraining in plugging leaks of legacy and abandoned wells can position Louisiana's residents for increased employment opportunities and additional career pathways. Engagement with community colleges across the state should be central in implementation.
- *Public Health:* Addressing legacy infrastructure can reduce potential negative environmental and public health impacts of these sites to surrounding communities.
- *Environmental Protection:* Legacy site remediation reduces potential harm of orphaned and abandoned wells to surrounding ecosystems and can even improve ecosystem functioning through restoration practices.

ACTION 7.1 Hold former well operators accountable for orphaned wells

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR / Legislature	Pursue rulemaking to tighten the definition of "responsible party" and establish a companion database	Provide clarity and accountability for responsible parties

Leaks from orphaned wells create a large source of methane emissions where operators are not legally held responsible after wells are plugged and abandoned. This action recommends ~~DNR take~~ legislative and regulatory measures to ensure that former operators are held responsible for abandoned wells. ~~Through rulemaking, the DNR Office of Conservation should amend the~~This action recommends that definition of "responsible party" be amended through legislation, rulemaking by DNR, or a combination thereof to include all former operators. This proposed definition of "responsible party" ~~is significant~~ will help to ensure that the responsibility for abandoned infrastructure does not shift to the state over time. DNR should also collect and publish a database of orphaned wells that indicates their responsible parties to clearly identify the location and ownership of infrastructure in the event leaks are detected and need to be repaired immediately. Other opportunities should be explored to strengthen accountability through legislation or rulemaking by DNR, like

creating or clarifying a right of action for landowners with abandoned wells on their properties to sue responsible parties to force well plugging and site clearance. ~~We recommend t~~This action should be pursued immediately to identify responsible parties and kickstart methane reductions. ***(Associated Submitted Action Proposals: 167)***

ACTION 7.2 Strengthen financial security requirements for plugging wells

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR / Legislature	Pursue legislation to raise financial security and remove blanket securities	Incentivize compliance with operator requirements

Financial security requirements are state bonds that guarantee compliance of operators with regulations for the issuance of permits for oil and gas exploration, drilling, and plugging. Since 2014, DNR's Office of Conservation has implemented stronger regulatory practices of requiring financial security from operators and more frequent inspections, which has caused the number of identified orphaned wells to nearly double. However, extensive loopholes in financial security regulation allow~~s~~ operators to avoid meeting financial security requirements, leading to a failure to plug wells. Of the 716 wells that have been orphaned since financial security became a requirement, 55% were exempt from financial security. Therefore, this action recommends comprehensive legislative reform to raise the amount of financial security and remove the ability of operators to use blanket securities, a technique which allows the operator to circumvent financial security. Additional financial security should be added to the Oilfield Site Restoration (OSR) Program to fund plugging of abandoned infrastructure, where no responsible party can be identified. Other statutory reforms could include removing the cap on the OSR fund, requiring site-specific trust accounts for all wells involved in an ownership transfer, and increasing the bonding requirement for all wells in the coastal zone. ***(Associated Submitted Action Proposals: 166, 168)***

ACTION 7.3 Tighten the "future utility" designation and requirements for inactive wells

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR / Legislature	Pursue rulemaking to tighten the definition of "future utility"	Provide clarity and accountability for inactive wells

Under current regulation, operators can classify inactive wells with a "future utility" status if the well has potential for use in the future. However, DNR's ability to grant indefinite extensions creates a higher risk for "future utility" wells to become orphaned wells and subsequently creates potential negative impacts on the environment and communities. For example, over 1500 wells have been classified as "future utility" status for more than 25 years, over 400 more than 50 years. Over 7000 wells are currently listed as "future utility" and have had that status more than 5 years. This action recommends that DNR's Office of Conservation develop measures that tighten the definition and requirements of a "future utility" designation in its application and limit the duration a well can remain at "future utility" status. Under this action, current "future utility" wells would be reviewed and added to the list of orphaned wells as appropriate. Similar to other actions of Strategy 7, this action requires, and would benefit from, immediate action. ***(Associated Submitted Action Proposals: 169)***

ACTION 7.4 Provide workforce training to plug legacy wells

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR	Invest in workforce training programs for monitoring and plugging wells	Provide Louisiana workers opportunities to transition

Current Louisiana law limits operator responsibility to initial plug and abandonment; however, even properly capped and plugged oil and gas wells can weaken and leak over time. ~~Plugs are expected to last 100 years, even without enduring environmental stressors, and provide limited methane mitigation. This means that today: 1) millions of legacy wells are likely failing; and 2) all wells eventually become the responsibility of the government. For these reasons, t~~This action proposes investment in training Louisiana's workforce to monitor wells and quickly respond to leaks by plugging or replugging them as needed. This action tasks DNR's Office of Conservation to establish an Abandoned Well Pilot Program from federal and state funding that provides training, equipment, and jobs for unemployed residents in Louisiana to plug ~~orphaned~~ leaking abandoned wells. Pilots of this program should be initiated in ~~parishes~~ underserved communities with the highest concentration of oil and gas infrastructure and leaks. ***(Associated Submitted Action Proposals: 131)***

STRATEGY 8. Monitor and regulate methane emissions

Methane, more than twenty-five times more potent than CO_2, is a common and elusive GHG that must be monitored and abated for Louisiana to meet its emissions goals. Alongside leakage in pipeline infrastructure, methane is also intentionally and unintentionally released into the atmosphere through routine industrial practices, including at the wellhead during ~~of~~ extraction, during transport and storage, ~~refining, and direct use~~during processing and handling, and in instances of incomplete combustion. Waste management facilities and sites are also sources of methane emissions that require monitoring and regulation. Stopping these leaks and avoiding intentional methane releases both require new techniques for monitoring, measuring, and capturing methane, set forth in actions of this strategy.

Highlights of how this strategy can realize benefits for Louisiana:

- *Economy & Jobs*: Increasing the efficiency of methane extraction, reducing methane leakage, and maximizing methane recapture creates fewer economic losses from waste and leaks. Repairing methane leaks ~~will~~ can also create jobs.
- *Effectiveness and Longevity*: Methane leaks and intentional releases are not fully known or tracked, so monitoring programs using existing and ~~with~~ emerging technologies can ensure leaks are detected and quickly repaired, increasing the effectiveness of methane reduction.
- *Human and Environmental Health*: Reducing methane leaks can improve air quality and pipeline safety, benefiting Louisiana's ecosystems and residents. Data freely available to the public can build community support for actions directed at curbing emissions. With transparent access to methane emission information, communities can see realized benefits of investment in methane reduction.

ACTION 8.1 Enact methane waste rules

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DNR / DEQ	Pursue rulemaking to align with methane rules of other states and the EPA	Reduce amount of methane released

This action proposes that, through the Net Zero Standard ~~interagency framework~~ of Action ~~3.3~~3.4, DNR's Office of Conservation and DEQ collaboratively develop rules that require methane emitters to establish a baseline methane waste capture rate, determined by their quarterly reports, and enact methane waste rules in line with rules of other states. States such as New Mexico and Colorado have recently enacted methane waste rules to eliminate this wasteful practice with support from industry and environmental groups. New Mexico requires operators to capture no less than 98% of produced gas by December 31, 2026, starting on April 1, 2022. Although not setting a strict capture limit, Colorado requires use of modern, zero-emitting (clean) components at all new and most existing facilities to limit methane emissions. Alongside work of states, the EPA drafted federal methane rules in the proposed Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources (hereafter called "Standards for Performance"), published in the Federal Register November 15, 2021. Louisiana should advocate for enactment of federal rules and ensure that rules pursued by the state complement impending federal standards. DEQ

and DNR should immediately begin studying the standard best suited for regulating methane waste in Louisiana and begin the rulemaking process to align with the progress of other states. ***(Associated Submitted Action Proposals: 43, 89, CO, NM)***

ACTION 8.2 Establish methane monitoring stations in the GHG Monitoring Program

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DEQ	Incorporate emerging technologies into methane monitoring	Monitor methane releases with more frequency and accuracy

The most effective way to reduce leaks is to require frequent, and where possible, continuous monitoring. To more comprehensively monitor potent methane emissions, this action proposes that DEQ incorporate methane monitoring capabilities into the DEQ GHG Monitoring Program, proposed in Action 28.1 to ensure methane emissions are adequately understood and monitored. DEQ should work with outside stakeholders to utilize and deploy emerging technologies, such as remote sensing and satellite imagery, alongside traditional in-situ sensing for continuous monitoring of methane emissions. The GHG Monitoring Program should also ensure that data and maps that show regular fluxes in methane emissions are provided freely to the public and are updated on an annual basis. ***(Associated Submitted Action Proposals: 76, 151)***

ACTION 8.3 Enable an effective Leak Detection and Repair Program

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DEQ / DNR / US-EPA	Strengthen LDAR best practices to monitor and fix malfunctioning practices	Repair methane releases with more frequency and accuracy

To align with federal rules to curb methane emissions by 30% by 2030, more regularly scheduled inspections, sufficient oversight measures, facility-wide leak rate goals, frequent component monitoring, and other measures are needed to complement federal funding and comprehensive monitoring to ensure leaks throughout the supply chain are swiftly detected and repaired. Many states have established Leak Detection and Repair (LDAR) programs, modeled after the U.S. EPA LDAR Program and Best Practices Guide, to monitor GHG emissions and criteria pollutants and require owners and operators to find and fix leaky and malfunctioning equipment at production facilities, compressor stations, natural gas storage facilities, and process plants within a set time period of detection. Leak detection using infrared, flyovers, remote sensing, and other early detection technologies can shorten timelines for reporting and repair compared to technologies utilized by many existing LDAR programs. Alongside reduced emissions, air quality and pipeline safety improvements make LDAR programs very cost-effective for all parties involved. Provided with the proper funds, DNR and DEQ, through the~~ir~~ Net Zero Standard ~~implementation framework~~ in Action ~~3.3~~3.4, should build on and strengthen existing LDAR ~~programs~~ practices implemented by DEQ for criteria pollutants through early leak detection, and develop comprehensive ~~and develop a~~ methane LDAR, consistent with the enacted version of the EPA's proposed Standards of Performance (see Action 8.1). ~~program.~~ ***(Associated Submitted Action Proposals: 91)***

Transportation, Development, and the Built Environment

Five strategies and twenty-three actions encompass broad aspects of three priority areas: transportation, land use planning and development, and the built environment. Transportation approaches decarbonization of passenger, medium-duty, and heavy-duty vehicles alongside freight, aircraft, and shipping emissions. Development and the built environment ~~related~~ strategies seek to reduce emissions through coordinating comprehensive land use planning and resilience as well as efficiencies of homes and buildings.

- Strategy 9: Accelerate adoption and accessibility of ~~clean~~ low- and zero-emission vehicles and fuels
- Strategy 10: Reduce vehicle miles traveled and increase transportation efficiencies
- Strategy 11: Increase urban, rural, and regional public transit service
- Strategy 12: Coordinate land use planning to reduce sprawl and support healthy and resilient communities
- Strategy 13: Improve the efficiency and resilience of homes and non-residential buildings

STRATEGY 9. Accelerate adoption and accessibility of ~~clean~~ low- and zero-emission vehicles and fuels

Transitioning transportation from fossil fuel combustion to electric vehicles and low-carbon fuels will play a critical role in reducing emissions from this sector. Louisiana can support greater adoption of clean vehicles by expanding the infrastructure to support this transition, including charging and fueling stations that are accessible to more drivers and passengers across income levels. This strategy includes actions focused on light-duty passenger vehicles as well as actions tailored to the additional technological and infrastructural needs to transition medium- and heavy-duty transportation, shipping, and aviation to low or zero-carbon fuels. The state of Louisiana can lead by example through efforts to transition public fleets to ~~clean~~ low- and zero-emission vehicles.

Highlights of how this strategy can realize benefits for Louisiana:

- *Supporting the Workforce*: Investments enhancing transportation infrastructure, in conjunction with targeted job training, can provide employment opportunities to Louisianans, including those of differing educational backgrounds.
- *Strengthening the Economy:* Global and national trends may lead to broad, increased use of electric vehicles. This shift may alter expectations of residents, tourists, and commercial interests alike, and proactive preparation will enable a smooth transition and mitigate negative economic impacts.
- *Human and Environmental Health:* Increasing use of electric vehicles – which produce limited or no tailpipe emissions – can improve overall air quality with subsequent benefits to public health and the environment.

ACTION 9.1 Shift public fleets to low and zero-emission vehicles

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA	**Update procurement practices to meet public fleet transition goals**	**Transition 50% public fleets to low- and zero-emission vehicles and fuels by 2035 and 100% by 2050**

With over 80,000 public vehicles operating in Louisiana, significant GHG emissions reduction can be realized by transitioning state and local government fleets to low- and zero-emission vehicles and fuels. This action would set a statewide policy and goal for the transition 50% of public fleet vehicles to low- and zero-emission vehicles and fuels by 2035 and 100% by 2050. Unless agency needs dictate otherwise, passenger, light-duty vehicles should move to zero-emission, electric vehicles, while heavy-duty trucks and vehicles initially transition to low-carbon alternative fuels, such as renewable diesel, that can be used in existing vehicles. Action should be led by DOA but requires coordination across state agencies, local government, and other public fleet users (e.g., levee boards) to update procurement policies and practices. To ensure successful implementation, training for vehicle maintenance should be made available to fleet managers. In order to meet the fleet transition goal, implementation must begin immediately with DOA prioritizing a transition for passenger and other~~,~~ light-duty vehicles while technology continues to evolve for medium- and heavy-duty vehicles. ***(Associated Submitted Action Proposals: 28, 36, 41, 143, 157)***

ACTION 9.2 Expand the availability and reduce socio-economic and geographic barriers of low- and zero-emission passenger vehicles and supporting infrastructure

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD / NGOs / MPOs / Local Governments	Utilize federal funding to intentionally build out infrastructure	250 electric vehicle charging stations per 100,000 residents by 2050

As low- and zero-emission vehicles become increasingly available for passenger transit, steps need to be taken to ensure strategic and equitable statewide buildout of vehicle electrification infrastructure, with ~~special attention given to~~ measures to prioritize access for underserved and overburdened communities. Louisiana's Department of Transportation and Development (DOTD), in partnership with Louisiana Clean Fuels and others with local knowledge, can utilize federal funds to deploy electric vehicle charging infrastructure across the state in a way that is strategic and increases access for all communities. ~~Together, DOTD and partners should also provide community education to increase the demand for and adoption of electric vehicles.~~ A goal of 250 stations per 100,000 residents by 2050 should be adopted to ensure progress is made towards this action. Alongside charging infrastructure, action must also be taken to ensure access to the vehicles themselves across more income levels. Together, DOTD and partners should also provide community education to increase the demand for and adoption of electric vehicles. To this end, incentives for low- and zero-emission vehicles should be reinstated by the Legislature, either in the form of a targeted incentive program or tax credit according to income, to accelerate adoption and reduce barriers to vehicle access. Incentives need to prioritize up-front grants, over rebates and loans, to provide equitable access and a means by which low-income households can purchase electric vehicles. ***(Associated Submitted Action Proposals: 83, 137, 175)***

ACTION 9.3 Prepare for the expanded availability of alternative fuels for waterborne transport, medium- and heavy-duty vehicles, and aviation

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD Transportation Research Center / universities / freight companies / ports / long-haul trucking	Research efficacy of alternative fuels to decarbonize heavy transit	Research and deploy at scale solutions to decarbonize freight

Unlike light-duty vehicles, medium- and heavy-duty vehicles as well as other modes of freight transportation (waterborne and airborne) are more challenging to decarbonize with current technology and will rely on alternative fuels in the near-term due to increased weight and inefficiency of electrification technology. As electrification technologies and alternative fuels continue to improve, ~~Increased~~ increased availability of existing alternative fuels ~~sources~~ is critical to reducing GHG emissions now and facilitating a smooth transition to carbon neutral long-haul transportation. However, near-term investment is needed to research, pilot, and deploy effective low- and no-carbon fuels for different facets of long-haul transportation. This action proposes increased access to alternative fuels (particularly for heavy trucks), efficient and sustainable fuels (particularly for aviation), and investments in innovation (particularly for waterborne transportation). To get there, Louisiana's universities and DOTD's Transportation Research Center can immediately take the lead in advancing and innovating solutions that will reduce the GHG emissions from medium- and heavy-duty vehicles, waterborne shipping, and aviation. Universities should work with freight companies to tailor decarbonization research for Louisiana-specific needs and industries. Specific to waterborne freight, ports should lead in partnership with shipping companies to identify and ensure availability of low- and no-carbon fuels at the port. Specific to long-haul trucking, trucking companies can lead in partnership with Louisiana's DOTD to secure interest in and ensure availability of

renewable diesel alongside interstates. Meanwhile, other successful programs like the Port of New Orleans' Clean Truck Replacement Incentive Program should be implemented across ~~with other~~ Louisiana ports. ***(Associated Submitted Action Proposals: 12, 13, 22, 27, 84, 94, 125)***

ACTION 9.4 Implement targeted pilot projects to accelerate transition of medium- and heavy- duty vehicles to low- and zero-emission vehicles

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD / DNR / DEQ	**Identify and pursue pilot projects to decarbonize heavy transit**	**Research and deploy at scale solutions to decarbonize freight**

To accelerate the deployment of electrification technology for medium- and heavy-duty vehicles and freight, targeted pilot programs and demonstration projects can encourage and accelerate a transition to low- emission medium- and heavy-duty vehicles now, while technology advances to become more accessible and deployable at scale in the long-term. This action proposes DOTD, in partnership with DNR and DEQ, identify and implement targeted pilot projects to test emerging technologies in the near term that prepare for deployment at scale of clean medium- and heavy-duty transit and long-haul trucking. With recent federal investment in freight truck electrification, states agencies should maximize near-term funding opportunities and partner with the U.S. DOE to access and serve as a conduit for freight decarbonization across the nation. Similarly, funding to replace diesel-fueled with electric school buses is available at the federal level. These vehicle transitions not only reduce emissions but can also serve as mobile power sources to meet community energy needs post-disaster. ***(Associated Submitted Action Proposals: 41, 84, 137)***

STRATEGY 10. Reduce vehicle miles traveled and increase transportation efficiencies

A central approach to reduce GHG emissions from the transportation sector is to reduce total travel demand and overall fuel usage by passenger and freight vehicles. Fewer trips and fewer vehicles on the road also reduce traffic congestion and traffic-related accidents. This strategy pursues efficiency through reduced vehicle idling, lowers the number of trips taken by expanding access to online services and remote work capabilities, and shifts passenger and freight trips to more efficient modes of transportation.

Highlights of how this strategy can realize benefits for Louisiana:

- *Human and Environmental Health:* In addition to reducing GHG emissions, reduction of vehicle miles traveled would reduce the production of other pollutants found in vehicle exhaust that can be harmful to public health and the environment. Furthermore, increasing safe access to active transportation options such as walking and biking provides more opportunities for exercise and is tied to improved public health outcomes.
- *Broader Access to Essential Services and Job Opportunities:* Increasing internet access and teleworking opportunities can provide additional access to essential services and employment opportunities to individuals for whom working or traveling outside the home may be challenging.

ACTION 10.1 Promote opportunities to reduce vehicle miles traveled

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD / MPOs / Local Governments	**Utilize multiple mechanisms to implement VMT reduction strategize**	**Double use of alternative modes of transportation by 2035**

Vehicle Miles Traveled, or VMT, are a common measure of transportation demand and can serve as a proxy for reducing GHG emissions associated with the movement of people or goods. Promoting alternatives to VMT can be accomplished through transportation mode shifting, where alternatives to automobile travel like walking or bike riding are encouraged, low-carbon or more fuel-efficient freight options, or where multiple individual trips are consolidated through carpooling or public transit. This action proposes that Louisiana set goals of doubling use of alternative modes of transportation by 2035. To meet this goal, the action tasks DOTD to support regional Metropolitan Planning Organizations (MPOs) and local governments to implement VMT reduction strategies that support, promote, and incentivize: 1) Complete Streets infrastructure (where the safe mobility for all users including pedestrians, bicyclists, public transit users, and automotive users is enabled and supported); and 2) the effective integration of local and regional transit and land use strategies, such as evaluating how project design criteria and scoping can be modified for different outcomes. This action pairs with the transit initiatives in Strategy 13 and the compact development actions in Strategy 14 and should build on existing success stories from partnerships with local government, nonprofits, and advocacy groups. ***(Associated Submitted Action Proposals: 69, 70)***

ACTION 10.2 Expand broadband internet access

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
BEL Commission	Leverage federal funding for expansion of broadband access	Reduce vehicle miles traveled through at-home resources

The COVID-19 pandemic has accelerated the transition to online services and work from home opportunities, but this transition has not been widespread nor accessible for all Louisianans due to limited access to broadband internet connections. Expanding broadband, particularly for rural communities, can facilitate easier access to e-commerce, telecommuting, employment opportunities, and virtual health while reducing overall transportation demand and GHG emissions. The state established the Broadband for Everyone in Louisiana (BEL) Commission in 2019 to facilitate adoption by private sector providers, public entities, and other stakeholders and availability of broadband for Louisiana residents. This action proposes partnering with the BEL Commission and their 2020 Action Plan to maximize the potential of expanding broadband availability to mitigate GHG emissions and ensure cross-government and collaboration with multiple stakeholders to build out broadband effectively, efficiently, and equitably in public rights of ways and through other means. Specifically, with available federal funds from the 2021 Infrastructure Investment and Jobs Act, this action tasks the BEL Commission to apply for grants that connect Louisiana's underserved communities to expanded broadband access and deployment. ***(Associated Submitted Action Proposals: 25)***

ACTION 10.3 Enact a state policy that allows for hybrid workplaces and telecommuting

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA	Adopt a statewide hybrid workplace policy	Reduce vehicle miles traveled through at-home resources

DOTD implements a variety of Travel Demand Management (TDM) strategies designed to maximize choice while reducing travel, single occupant trips, and congestion. TDM options are funded by DOTD and MPOs and include biking, walking, ridesharing, public transit, telemedicine, and telecommuting. To further reduce regular travel demand in Louisiana, this action proposes DOA adopt a statewide policy that allows for and encourages hybrid workplaces with reduced or staggered in-office days with telecommuting for public employees. Alongside reducing emissions, this policy eliminates time spent commuting and can cut energy usage in public buildings. ***(Associated Submitted Action Proposals: 81)***

ACTION 10.4 Reduce idling of public fleets

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA	Pursue rulemaking to require telematics for fleets	Maximize efficiency of GHG-producing vehicles

One gallon of fuel can be burned per hour of idling, wasting fuel and producing up to 20 pounds of CO_2. Idle reduction technologies and practices can reduce the time that vehicle engines run while at rest and reduce these unnecessary GHG emissions and fuel waste. This action proposes that DOA requires idle reduction telematics be placed on all of Louisiana's publicly owned GHG emitting vehicles. Implementation of this action would be supported by fleet telematics software,

already installed in many state-owned vehicles, to manage fuel usage and set an automatic shutoff for vehicles after prolonged idling. Training for fleet managers and operators in all agencies is necessary to support telematics usage and successful implementation across public fleets. Telematics requirements should be pursued in the short-term to reduce emissions from gasoline-fueled vehicles as the public fleet transitions to zero-emission vehicles. ***(Associated Submitted Action Proposals: 33, 100, 161)***

ACTION 10.5 Explore short-term opportunities and incentives to increase efficiency of freight transport

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD / DOA / LED	**Invest in research of smart transit techniques and best practices**	**Maximize efficiency of energy-intensive freight transit**

Given the disparity between needed investments for freight infrastructure and available funding, DOTD, in partnership with DOA and LED, should work with private freight companies (ground, rail, ~~ports~~maritime facilities, and aviation) to elicit, prioritize, and fund project proposals that can improve the efficiency of freight transportation in and through the state. Project examples include targeting emissions reductions for freight transport along highways, at ports, and at airports such as those that optimize traffic, directly reduce emissions and idling such as shore power, reduce carbon intensity, and explore mode shifting in ways that build upon existing DOTD congestion reduction programs. ***(Associated Submitted Action Proposals: 1, 33, 106)***

STRATEGY 11. Increase urban, rural, and regional public transit service

Reliable public transit systems are pivotal in the effort to reduce VMT and vehicle emissions. The hallmarks of a successful public transit system include consistent, high rates of ridership and stability of the systems that support both frequency and reliability of public transit service. To meet VMT reduction goals, more funding should be allocated to the State Transportation Plan and transit operations across Louisiana. Additionally, it will be important to coordinate more on-demand rural transit services and improve regional transit connectivity. This has the potential to connect communities to employment opportunities and other essential services across the state that are otherwise inaccessible.

Highlights of how this strategy can realize benefits for Louisiana:

- *Strengthening the Economy and Providing Access to Jobs and Services:* Investing in public transit can provide direct employment opportunities that strengthen the economy in the short-term, while increasing access to jobs more broadly by connecting workers to opportunities and providing long-term increases in workforce productivity.
- *Improving Quality of Life:* Public transportation infrastructure in both rural and urban settings can enable all Louisianans broader regional access to goods and services. It expands access to groceries, health services, and other basic necessities as well as avenues for recreation or entertainment for individuals and families that do not own a private vehicle—including members of historically marginalized communities.

ACTION 11.1 Increase financial support to urban transit operators to increase ~~statewide~~ ridership

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD / Regional MPOs / Municipalities / Legislature	**Leverage available funding for urban transit deserts and local jurisdictions**	**Reduce VMTs through connectivity within urban areas**

More reliable and frequent public transit is necessary to increase ridership and reduce single-vehicle trips. Increased funding for local transit service, particularly in high-population areas of low-wage workers known as "transit deserts," will also benefit marginalized, transit-dependent populations in urban areas and provide competitive access to economic opportunity. This action proposes that the Legislature allocate more resources ~~be allocated to DOTD~~ through the state budget and the Infrastructure Investment and Jobs Act to increase funding for transit operations in "transit deserts" and provide greater funding of the State Transportation Plan. The state should work with federal partners to ensure more federal funding moves down to regional MPOs to subsidize annual transit operations, provide resources to urban transit deserts, and allow local jurisdictions to secure funding more easily for transit locally. To serve transit deserts effectively, funding can be prioritized by urban transit providers to add smaller vehicles and demand-responsive operations. ***(Associated Submitted Action Proposals: 95, 138)***

ACTION 11.2 ~~Enable access to resources outside urban centers for rural transit access~~Increase financial support for rural transit service including connectivity to urban transit systems

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD / Local Governments / Rural Transit Providers	Develop on-demand ridership systems in rural areas	Reduce VMTs through connectivity within rural areas

Nearly 750,000 of Louisiana's 4.6 million residents live in rural areas. Therefore, a necessary measure to reduce passenger vehicles on the road requires access to resources beyond urban centers and greater investment in rural transit service. This action builds on the prior action focused on local transit in urban areas and proposes that DOTD, local governments and rural transit providers take a variety of measures to enable resource access to rural communities including rural bus services, obtaining smaller transit vehicles for more specialized trips, developing an on-demand ridership system, and scheduling planned trips to city centers coordinated and supported by the community. ~~Federal funding, allocated to the State Transportation Plan, should be prioritized for these expanded services.~~ A significant impediment for rural transit is the local match of the cost-share for federal dollars, so with an influx of federal dollars, state allocations and other grants should be utilized and prioritized to support locals in matching federal funds. **(*Associated Submitted Action Proposals: 81, 95, 128)***

ACTION 11.3 Invest in regional transit to connect communities to jobs and services across Louisiana

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD / Local MPOs / Rural Governments / Municipalities	Collaborate and plan intentional connectivity between cities	Reduce VMTs through connectivity across regions of Louisiana

Alongside local and intra-city transit, regional connectivity can encourage greater use of public transportation across rural and urban areas and transport systems. Dedicated bus lanes, ~~and~~ high-occupancy vehicle (HOV) lanes, and Bus Rapid Transit on interstates, state highways, and major arterial roadways encourage transit use and carpooling. ~~allow for more efficient travel on highways and urban streets.~~ The federal Infrastructure Investment and Jobs Act (IIJA) includes funding to expand passenger rail service to increase travel options between cities and states. This action proposes coordination among applicable federal, state, and local agencies to take advantage of available funding opportunities through the IIJA to advance regional transit initiatives. For example, a portion of the $66 billion available for passenger rail in the IIJA ~~federal Infrastructure Investment and Jobs Act~~ could be used to support a high-speed rail between New Orleans and Baton Rouge that could help minimize light-duty and bus travel between Louisiana's largest cities for daily commuters, increase tourism economic activity, and participation in cultural or entertainment events. This action proposes federal investment through Louisiana DOTD, local MPOs, rural governments, and municipalities to intentionally begin collaborating on and planning in the short-term to build infrastructure that supports medium- and long-term regional connectivity across Louisiana. ***(Associated Submitted Action Proposals: N/A)***

STRATEGY 12. Coordinate land use planning to reduce sprawl and support healthy and resilient communities

Mitigating the emissions causing climate change is interconnected with adapting to the impacts of climate change, particularly as it pertains to land use and land use management. Reducing sprawl and promoting compact development, a practice where land is used efficiently and intentionally, reduces GHG emissions and makes communities more resilient. Compact development promotes risk reduction and open space conservation while encouraging reuse and retrofit of existing structures, energy efficiency, use of public transit and active modes of transportation like walking and biking, and reduced VMT. In order to coordinate across risks, vulnerabilities, relevant ongoing initiatives, and land use objectives throughout Louisiana, a statewide framework is needed to unify and guide holistic land use management. Actions under this strategy aim to improve the coordination of land use practices across the state and to assist local communities in planning for a climate-ready future.

Highlights of how this strategy can realize benefits for Louisiana:

- *Protecting the Environment:* Reducing sprawl slows expansion of new development into natural settings, preventing negative impacts to ecosystems and reducing the destruction of habitats.
- *Strengthening Community Resilience:* Smart land use planning enables communities to anticipate and mitigate the potential negative impacts of forces beyond their control, such as designing transportation systems that can withstand climate-related disasters and formulating proactive solutions to manage population growth.

ACTION 12.1 Create a statewide authority to provide guidance for resilient local land-use practices

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA	**Create an Office of State Planning**	**Support locals in comprehensive land use, climate mitigation, and adaptation planning**

This action proposes the creation of an Office of State Planning housed within DOA. This Office should facilitate coordinated decision making as it relates to comprehensive land use, prioritizing initiatives that support flood risk reduction, maximizes community resilience, and reduces GHGs. The Office of State Planning should build strong partnerships across state agencies and with local and regional officials to demonstrate the potential for land use practices to help meet climate goals and reduce climate risk. The Office should support locals in the development of comprehensive land use plan and climate adaptation and mitigation plans that address the spectrum of relevant community challenges and incorporate the needs of underserved and overburdened populations. This land use authority should also partner with DOTD to promote and implement ways to VMT reduction measures (Action 10.1) and compact development practices (Action 12.2). ***(Associated Submitted Action Proposals: 18, 40, 69, 128)***

ACTION 12.2 Encourage climate-conscious land use planning ~~compact development~~ through local trainings, incentives, tools, and model standards and ordinances

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA Office of State Planning / DOTD	Convene stakeholders to plan and design compact development across levels of government	Maximize VMT reduction and utilization of regional transit through land use planning

To encourage ~~compact~~ climate-conscious development, this action proposes DOTD and the Office of State Planning start in the near-term by convening public, private, and local government bodies ~~that~~ to assist in planning and designing compact development, permitting, and regulation to maximize land conservation, community resilience, and reduced VMT. After receiving feedback from local groups, the state, through DOTD and the Office of State Planning, should pilot promising approaches to local planning and design incentives and regulatory systems that support compact development, Complete Streets, and equitable transit access. ***(Associated Submitted Action Proposals: 65, 69, 70)***

ACTION 12.3 Align statewide transportation planning ~~and decision making~~ with land use and compact development planning

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA Office of State Planning /Regional MPOs / Local Government	Develop land use and transportation modeling tools for utilization in decision making	Maximize VMT reduction and utilization of regional transit through land use planning

Transportation infrastructure often dictates how and where land is used and developed in Louisiana. To ensure compact development, regional transit, and other actions set forth in this section are prioritized in the state, this action proposes that transportation planning align with smart land use practices. Land use and transportation modeling tools can test land use scenarios and transportation pricing programs and should be incorporated into how decisions are made in transportation. This alignment would not only reduce VMT, allow for widespread implementation of Complete Streets, facilitate equitable access to public transit, and reduce the need for single-occupancy vehicles, but would also allow for greater implementation of green infrastructure and resilience measures to mitigate against Louisiana's flood risk. This action proposes empowering local governments and MPOs to develop tools that provide adequate information on alignment of these priorities, led by DOA's Office of State Planning for land use guidance in partnership with DOTD in transportation guidance. Alignment of transportation planning with smart land use would be led by DOA with support from DOTD in close partnership by MPOs and local jurisdictions. ***(Associated Submitted Action Proposals: 65)***

ACTION 12.4 Evaluate the climate impacts of major state-funded transportation projects

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOTD	**Incorporate a climate impact analysis into DOTD project planning and design**	**Mitigate unintentional emissions through large-scale transportation**

Major transportation projects, such as the construction of new or expanded roadways, can have multiple cascading impacts on GHG emissions as well as community resilience—from the materials used in construction to the spurring of new areas of development to inducing more VMT and increased congestion. This action should require that proposals for medium- to large-scale state-funded transportation projects include an analysis by DOTD of their climate impacts, including induced GHG emissions as well impacts on community resilience from future weather events. Tools developed by DOTD for this analysis would be made freely available to parish and municipal governments to inform their decisions about locally-funded transportation projects. Transportation spending can also help jump start the "Buy Clean Louisiana" program (Action 6.1), prioritizing lower carbon intensity materials and advancing best practices and standards in road construction. Further, this action prepares Louisiana for policies set forth through the US Department of Transportation's Climate Action Plan, released in August of 2021. ***(Associated Submitted Action Proposals: N/A)***

ACTION 12.5 Develop a model solar ordinance for adoption by local governments

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA Office of State Planning / DNR	**Create model solar ordinance policy materials**	**Encourage purchasing of renewable power**

The interest by solar developers in building out infrastructure in Louisiana communities is increasing steadily and will need to continue to grow to meet Louisiana's clean power needs. Ordinances can be important tools for guiding these developments while achieving community goals and standards. However, many - if not most - local governments lack the capacity and technical expertise to develop ordinances on their own. Furthermore, lack of knowledge or misinformation about solar energy facilities may leave communities unprepared and unprotected from the impact of this type of industry and land use. The model solar ordinance developed by this action would be a tool available to local governments and contain the comprehensive policy language needed to protect properties, environments, and people, as well as guide and support solar energy investments locally. This tool would provide context, information, and capacity to local governments, increase predictability of impact, and support current and future solar energy investments that can significantly help the state transition to renewable energy. This action recommends DOA Office of State Planning, in partnership with DNR, be the lead and authorizing entity to provide guidance for local governments and coordination with local land use. ***(Associated Submitted Action Proposals: 20)***

STRATEGY 13. Improve the efficiency and resilience of homes and non-residential buildings

Energy efficiency improvements and electrification of building components and appliances can reduce GHG emissions from residential and commercial buildings, while also reducing utility costs and potentially decreasing other air pollutants associated with electricity production. Combining energy efficiency retrofits with storm weatherization and other resilience improvements can ensure Louisiana homes and businesses are prepared for the future. Actions under this strategy support building retrofit programs as well as updates to energy efficiency standards and building codes.

Highlights of how this strategy can realize benefits for Louisiana:

- *Energy Affordability:* Enhancing the efficiency of homes decreases overall energy costs for families, through improved insulation, air sealing, and appliance and HVAC efficiency. Examples include increasing home insulation, reducing heating needs, and replacing lighting with lower wattage bulbs.
- *Economy and Jobs*: A regular pipeline of building retrofits and energy efficiency upgrades could create a steady pipeline of jobs in the construction trades.
- *Increased Quality of Life:* Retrofitting of homes provides opportunities to enhance the quality of life for residents by mitigating excess energy usage and improving indoor air quality and circulation, while conducting efficiency upgrades, such as remediation of lead and mold.

ACTION 13.1 Accelerate the retrofitting of existing residential and commercial buildings to support comprehensive energy efficiency and resilience upgrades

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
PSC / LHC / DNR / DOA-OCD	**Inventory and streamline application to existing efficiency programs**	**5% retrofit of residential and commercial buildings each year**

With multiple residential and commercial efficiency programs in existence, this action proposes that the LPSC, in partnership with the Louisiana Housing Corporation, DNR, Office of Community Development, and local governments, streamline existing programs and leverage federal funds to reach a 5% retrofit per year retrofit target. Multiple programs across various governing entities, including DNR's Home Energy Loan Program (HELP), the expired Home Energy Rebate Option (HERO) program, and the Louisiana Housing Corporation (LHC) Weatherization Assistance Program (WAP), often obfuscate eligibility and requirements for potential applicants. Similar to the New Orleans EnergySmart Program, this action should provide a centralized home assessment for homeowners needed to apply for any programs, clarify the intents of various efficiency programs, and direct residents and building owners to the application best suited for their needs. Lastly, program development through this action should coordinate outreach to encourage homeowners and small businesses to understand their energy usage, identify possible areas for improved efficiency, and develop grants that ease barriers ~~loans or rebates~~ for low-income ~~communities~~ households to participate. This outreach is necessary ~~to ensure equitable access to efficiency programs and~~ to provide assistance for low-income ~~communities~~households. Grant funding for existing and future retrofit programs should be prioritized for homeowners and renters who face the greatest energy cost burden – those who pay more than 5% of their income on electricity bills.

As mentioned in prior actions, opportunities for federal funding will flow through existing weatherization programs, which will provide immediately realized benefits upon implementation of this action. Alongside federal funding explicit for weatherization, federal pre- and post-disaster funding disbursed by the state should be required to incorporate energy efficiency and weatherization best practices into residential and commercial new builds and retrofits of buildings. ***(Associated Submitted Action Proposals: 16, 87, 102)***

ACTION 13.2 Redesign and expand property-assessed clean energy (PACE) financing

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Legislature / Local Governments	**Pursue legislation for redesign of PACE**	**Encourage effectiveness of existing building efficiency programs**

This action provides a voluntary avenue for home and business owners to finance energy efficiency and renewable energy projects for their property through property-assessed clean energy (PACE). The types of projects under PACE tend to include energy efficiency improvements (e.g., insulation, weather sealing, high-efficiency water heaters) as well as solar and other on-site renewable energy systems. Retrofitting low-income homes should also consider roof repairs, which may be a prerequisite for the effective deployment of rooftop solar. This program covers the up-front cost of qualified energy improvements with financing from a local government and then spreads the repayments over a longer period such that the costs of these energy improvements would be distributed over the lifetime of the project. This action proposes working with the Louisiana Legislature and local governments to redesign, enable, and expand PACE in Louisiana with specific provisions to provide access to low-income households, and to provide consumer protections. This includes education and outreach to developers, realtors, mortgage lenders, title companies, appraisers, and homeowners as well as streamlining and consistency of practices among actors. ***(Associated Submitted Action Proposals: 146)***

ACTION 13.3 Incentivize the electrification of building components in residential and commercial buildings

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Legislature	**Pursue legislation for efficient and electric appliance rebates**	**Encourage efficiency of building components**

Alongside the need to retrofit homes for increased efficiency and weatherization, appliances and systems (e.g., water heaters, HVACs, driers, and stoves) account for a large share of building energy use. Electrifying these building components and systems not only reduce GHG emissions when they are powered by renewable or clean electricity, but they also save the user money due to increased energy efficiency. This action proposes that the Louisiana Legislature develop a ~~rebate~~ grant program to incentivize the purchase of efficient electric appliances and systems by homeowners and small businesses. To improve equitable access, ~~rebates~~ grants should be on a graduated scale based on income. This action would also work with retailers, contractors, and distributors to increase stocking of these appliances, so they are available options for unplanned upgrades (i.e., appliance breaks). It also includes making more widely available point-of-purchase materials to increase awareness. ***(Associated Submitted Action Proposals: 29)***

ACTION 13.4 Strengthen minimum energy and lighting efficiency standards for residential, commercial, and public buildings

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Legislature / LSUCCC / PSC	Pursue legislation for energy efficiency code updates and standards	Require minimum efficiency of buildings

Minimum efficiency standards can reduce energy demand and the associated GHGs from buildings. Currently, the authority to set energy efficiency standards for buildings and structures is distributed across multiple state entities, including the Louisiana State Uniform Construction Code Council (LSUCCC), the state fire marshal, and DNR. This action proposes that the Louisiana Legislature allow the LSUCCC to update Part IV-Energy Conservation of the International Residential Code beyond the 2009 edition. This action further proposes that the state fire marshal update the Commercial Building Energy Conservation Code to strengthen energy efficiency standards. The state fire marshal, and the LSUCCC should it receive authority to update the Residential Energy Conservation Code, should consult with the DNR Office of Energy, DOA Office of Facility Planning and Control, local governments, the LPSC, LHC, residents, and key stakeholders when updating these respective codes. Further opportunity for lighting efficiency comes from transitioning streetlights to LED. LED streetlights require additional action of the PSC to review rate tariffs in order to stimulate statewide adoption of energy-saving streetlights. ***(Associated Submitted Action Proposals: 133)***

ACTION 13.5 Lead by example in Louisiana through energy benchmarking in state public buildings

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DOA	Pursue funding for implementation of energy benchmarking requirements	Monitor carbon impact of buildings and building materials

The Louisiana Legislature passed Act 1184 in 2001, requiring benchmarking and disclosure of energy performance of buildings constructed with state funds. However, funding constraints has impeded implemented by DOA's Office of Facility Planning and Control. With immediate emission reductions that can be actualized, this action proposes that the state allocate funding in the near-term for DOA's implementation of Act 1184 and development of a system for benchmarking the energy performance of public buildings in Louisiana. This benchmarking system would use a life-cycle analysis methodology to calculate the carbon impacts from construction, materials, and operations over time. This system can be used to guide scoping, design, and procurement, but also in evaluating the carbon impacts of retrofits compared to a new build alternative. Once developed, the energy benchmarking system could also be used by state subdivisions, parishes, and municipalities in the medium- and long-term as a guide for developing their own initiatives, such as the St. Tammany Healthy Resilient Buildings Initiative, that can realize energy cost savings and improved air quality. ***(Associated Submitted Action Proposals: 50, 87, 104, 134, 161)***

ACTION 13.6 Update statewide building codes

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LSUCCC	Pursue building code updates through the 2021-2022 revision process	Require minimum energy performance standards of buildings

The Louisiana State Uniform Construction Code Council (LSUCCC) is tasked with reviewing and approving updates to the state's building code. The Louisiana Legislature has, in the past, directed the LSUCCC to review and adopt new codes, such as the plumbing code. In the near-term, this action encourages the LSUCCC to complete the process of code adoption that is underway and adopt stronger minimum energy performance standards and codes for Louisiana by July 1, 2022. If newer building codes were adopted, building projects could take advantage of the latest low-carbon materials such as mass timber. In implementing this action, the Louisiana Legislature should also change the LSUCCC authorization and require them to adopt the latest model codes (such as the residential I-Codes or the ASHRAE 90.1 energy code) automatically as new versions are published, except if overridden by a majority vote of the LSUCCC. ***(Associated Submitted Action Proposals: 75, 133, 50)***

Natural Working Lands and Wetlands

This section includes three strategies to promote a comprehensive approach to action for natural sinks~~in the sector~~. ~~Natural lands address p~~Preservation and conservation of ~~existing~~ natural lands seek to increase sequestration potential of Louisiana's lands and forests. ~~Working lands promotes r~~Regenerative and sustainable agriculture practices of working lands seeks to reduce emissions and enhancesequestration of farming, ranching, and forestry lands. Wetlands promote ~~work done through~~efforts of the Coastal Master Plan and increased sequestration capacity of wetlands. Across these three strategies, the section aims to maximize climate mitigation and adaptation goals simultaneously, understanding that resilience and flood risk must be maximized in howLouisiana protects our lands for sequestration potential and comprehensive ecosystem benefits.

- **Strategy 14: Preserve and expand natural lands and urban green spaces to maximize climate mitigation and adaptation goals**
- **Strategy 15: Restore and conserve Louisiana's coastal wetlands to maximize climate mitigation and adaptation goals**
- **STRATEGY 16. Support the sustainable management and conservation of working agricultural and forestry lands**

Strategy 14. Preserve and expand natural lands and urban green spaces to maximize climate mitigation and adaptation goals

Louisiana's natural lands, from bottomland hardwood forests to urban green spaces, sequester carbon while also providing multiple ecosystem services and playing an important role in statewide resilience to the effects of climate change. The continuation and enhancement of these co-benefits hinges on natural land and urban green space preservation, conservation, and expansion. The actions within this strategy emphasize the importance of social equity in conservation planning to ensure that co-benefits can be realized for all Louisianans and ecosystems.

Highlights of how this strategy can realize benefits for Louisiana:

- *Access to Healthy Ecosystems:* Preservation and restoration of natural lands such as riparian buffers can contribute to continued access to clean water and productive ecosystems that also support fishing and hunting resources, both recreational and commercial. Natural lands are central to Louisiana's cultural heritage, including Indigenous cultures.
- *Reduced Environmental Disparities:* Investments in urban green spaces and natural lands can directly benefit local communities by increasing access to recreational amenities and reducing urban heat island effects through shading building surfaces, deflecting radiation from the sun, and releasing oxygen. Thoughtfully focusing investments in historically underserved communities can narrow existing socioeconomic disparities in access to green space and its benefits.

ACTION 14.1 Assess and ~~C~~conserve Louisiana's interior natural lands, prioritizing forested lands, grasslands, floodplains, wetlands and riparian areas

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LDAF / land trusts / local government / private landowners	Assess a baseline of areas most in need of conservation	30% conservation of interior natural lands by 2030

This action sets a target for 30% of Louisiana's interior natural lands be conserved or protected by 2030. This is a reasonably ambitious target based on the data and information that we have to date; however, a comprehensive baseline assessment of existing conserved and protected lands and areas to prioritize for conservation that maximize ecological, hydrologic, and social co-benefits will be a critical first step towards meeting this target and refining it if necessary. Because of the state's flood risk, action should focus on forested land, floodplains, wetlands, and riparian areas that provide critical hydrologic and watershed function and flood risk mitigation. In particular, preservation and active stewardship of unmanaged, old-growth forested lands and of native or semi-native grasslands, savannas, and woodlands offer a great opportunity for carbon sequestration and better land management in Louisiana. Priority areas should be preserved ~~in partnership with private landowners~~ through voluntary expansion of conservation servitudes and other conservation tools in partnership with landowners, land trusts, conservation organizations, Louisiana Department of Agriculture and Forestry (LDAF), Louisiana Department of Wildlife and Fisheries (LDWF), and local government. This effort should be jumpstarted through existing conservation plans, such as TNC's Ecoregional Plans, LDWF's State Wildlife Action Plan, and the White House's "America the Beautiful" Initiative. Conservation practices should consider and draw upon Traditional Ecological Knowledge, the evolving knowledge acquired by Indigenous and local peoples over hundreds or thousands of years through direct connection with the environment. This action should also ensure alignment with

projects and models of flood risk from the Coastal Master Plan and Louisiana Watershed Initiative. ***(Associated Submitted Action Proposals: 40, 68)***

ACTION 14.2 Support the expansion of urban tree canopy and green spaces

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LDAF / parish and municipal governments	Convene stakeholders of major urban areas	30% conservation of interior natural lands by 2030

Activities that reforest public areas in urban environments, ~~and~~ increase urban green spaces (e.g., parks, gardens, farms), and provide landscape-based stormwater management through green infrastructure can sequester carbon while also reducing heat island effect, reducing localized flooding, and increasing access to open space. Further co-benefits are reduced energy consumption and ongoing energy use due to a reduced heat island effect. This action proposes the state government, through LDAF, serve as convenor of parish and municipal governments to develop and promote a coherent, statewide approach that supports tree planting programs and maintenance in urban areas, particularly in historically underserved communities. In addition to this statewide approach, this action should empower locals to survey existing tree canopies in urban areas, with progress tracked and reported annually. Near-term deployment of a statewide approach and local surveys of existing canopies should inform longer-term urban transportation projects. Specific focus should be on increasing tree canopy and open space access in low-income, urban areas in both regional and local plans (e.g., State Watershed Plan, Hazard Mitigation Plan, Comprehensive Plans). This action proposes that DOTD review and update, as needed, its guidance for revegetating and planting along state-funded or managed roadways to maximize potential for natural carbon sequestration and landscape-based stormwater runoff management. Guidelines should include measures to improve urban tree canopy where sufficient road rights-of-way exist and where local maintenance sponsors can be identified.

~~Funding for this initiative should come from a requirement that state-funded transportation projects dedicate at least 3% of project costs to the planting of trees and the provision of landscape-based stormwater runoff management, with a specific focus on conservation in low-income, urban areas in both regional and local plans (e.g., State Watershed Plan, Hazard Mitigation Plan, Comprehensive Plans).~~ ***(Associated Submitted Action Proposals: 2, 4, 44, 64, 68, 78)***

STRATEGY 15. Restore and conserve Louisiana's coastal wetlands to maximize climate mitigation and adaptation goals

As with Louisiana's inland natural lands, our coastal wetlands sequester carbon and provide important ecosystem services, while also serving a critical role in buffering against rising sea levels and severe storms. Restoring and maintaining coastal wetlands for mitigation against these climate change-related threats can benefit Louisiana's vulnerable coastal communities and ecosystems, as realized though implementation of Louisiana's Coastal Master Plan. While sources of GHG emissions are well characterized in the 2021 GHG ~~Emissions~~ Inventory, significant knowledge gaps remain related to sequestration of carbon by the diverse ecosystems of Louisiana. Actions in this strategy include mechanisms to fill knowledge gaps and improve the accuracy of our data on natural carbon sinks in Louisiana.

Highlights of how this strategy can realize benefits for Louisiana:

- *Resilience to a Changing Environment:* Investments in restoration and conservation planning can increase community resilience to the threats of sea level rise and severe storms by providing a natural buffer to these threats.
- *Cultural Heritage:* The unique cultural heritage of South Louisiana is intrinsically tied to the natural environment of the coast, highlighting the need to protect environments important to traditional living cultures, including Indigenous cultures and traditional fishing communities. Project-by-project considerations are important for understanding how restoration projects impact cultural heritage.
- *Economy and Jobs:* Louisiana's coast is a working coast, with 20% of U.S. waterborne commerce coming through our ports and coastal wetland that provide important habitat for commercially important fish and game species. Conservation and restoration of Louisiana's coastal habitats is critical to both our local and national economy.

ACTION 15.1 Optimize the carbon sequestration potential of Louisiana's coastal wetlands through implementation of Coastal Master Plan projects

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
CPRA	Study carbon storage potential of wetland projects	Maximize carbon sequestration of coastal wetland restoration

Implementation of Louisiana's Coastal Master Plan includes coastal restoration actions to reduce land loss with a focus on risk reduction to support coastal communities. This action proposes that the Coastal Protection and Restoration Authority (CPRA) incorporate climate mitigation goals and measures (e.g., carbon sequestration potential of wetlands) into future iterations of the Coastal Master Plan as well as into project design and prioritization. Carbon sequestration potential should further make the case for investment in Louisiana's coastal program and unlock additional resources for project implementation. ***(Associated Submitted Action Proposals: 77)***

ACTION 15.2 Quantify and monitor the potential coastal blue carbon in Louisiana habitats and Coastal Master Plan projects

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
CPRA	Invest in assessments of net carbon flux of coastal wetlands	Maximize carbon sequestration of coastal wetland restoration

Quantification and monitoring to assess net carbon flux of Louisiana's coastal wetland habitats (fresh, intermediate/brackish, saline, and submerged aquatic vegetation; also known as coastal blue carbon) and open water habitats is a crucial step towards building a robust carbon finance framework. Carbon financing presents an opportunity for the state to partner with industry to expand coastal wetland restoration initiatives. Though a comprehensive understanding of blue carbon requires long-term study, existing efforts should continue through: 1) research and development led by the state, non-profits, the private sector, and/or academic institutions to create accurate models that will allow quantification of Louisiana's coastal blue carbon over time and across variable environmental conditions; and 2) expanded support and monitoring capacity of existing foundational monitoring programs (e.g., System Wide Assessment and Monitoring Program (SWAMP) that includes the Coastwide Reference Monitoring System (CRMS)) to quantify coastal blue carbon across coastal Louisiana over time. ***(Associated Submitted Action Proposals: 59, 60, 77)***

ACTION 15.3 Develop crediting mechanism and market specific to blue carbon

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Universities / CPRA / blue carbon experts and verifiers / coastal ecologists	Collaborate with stakeholders to design a carbon credit and market	Maximize investment in carbon sequestration of wetland restoration

Existing carbon markets are designed primarily for terrestrial forests and have not readily accommodated crediting of coastal wetlands. Specifically, standards for additionality and permanency must be tailored for dynamic coastal wetlands to recognize and account for their GHG benefits while being grounded in the realities of those dynamic systems. The natural carbon sequestration potential of Louisiana's coastal habitats is too valuable to be entirely precluded from market-based systems that can support the conservation and restoration of these important ecosystems. With the assistance of blue carbon experts, carbon verifiers, and coastal ecologists, Louisiana should evaluate the longevity of coastal carbon pools, the design and market interest for the creation of a specialized carbon credit, and the market specific to Louisiana's coastal wetland habitats. This potential Louisiana credit and market would more directly take into account the sequestration potential of coastal wetland habitats as well as the shorter time scales that conservation or restoration efforts would be expected to offer given the dynamic nature of deltaic systems. This credit and market would attempt to match the local and global demand for natural carbon credits with the urgent need to protect and restore Louisiana's wetland ecosystems for the preservation of the state's culture, communities, economy, and environment. ***(Associated Submitted Action Proposals: 59, 60, 77)***

STRATEGY 16. Support the sustainable management and conservation of working agricultural and forestry lands

Agriculture and forestry are a large component of Louisiana's economic prosperity as a state and requires intentional management to curtail and sequester GHG emissions. Best management practices and adoption of new technologies can help Louisiana reduce emissions from land practices while restoring natural ecosystems and biodiversity. Adoption of such practices will benefit from rural and urban focus, where equitable access for all farmers and foresters to such practices and technologies can be continued through conservation implementation programs and enhanced ~~explored~~ through grants and research programs. Actions within this strategy emphasize collaboration across all stakeholders and agencies to support the transition of Louisiana's farmers to adopting less GHG-intensive agricultural and forestry practices.

Highlights of how this strategy can realize benefits for Louisiana:

- *Public Health and Safety:* Agricultural best management practices can reduce nutrient runoff and improve water quality leading to lower incidences of harmful algal blooms, higher food and fiber productivity and enhanced local ecosystems.~~productivity for local ecosystems, and additional benefits to public health and safety.~~
- *Community Engagement and Participation*: Stakeholder engagement is critical in encouraging voluntary adoption of new practices and technology that better manage and increase the carbon sequestration potential in Louisiana's agricultural and forestry lands. Implementation of this strategy must consider engagement at multiple scales and through multiple mechanisms to communicate benefits of transitioning ~~away from high GHG emitting practices~~toward practices enabling lower GHG emissions and accelerated soil carbon sequestration.
- *Strengthening Louisiana's Economy*: Sustainable use of working lands leads to healthier soils, which promote long-term management and greater longevity of production. Moreover, encouraging Louisiana's investment in its own consumption of Louisiana-derived agricultural and forestry products will provide further strength to the state's economy while reducing GHG emissions ~~stemming from product export~~.

ACTION 16.1 Establish a Louisiana Conservation Innovation Program

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
USDA / LDAF	**Leverage USDA investment for innovative practices**	**Encourage conservation practices that sequester carbon**

Founded on the U.S. Department of Agriculture (USDA) Conservation Innovation Grant Program, many states have established Conservation Innovation Programs to incite creativity and promote development of innovative conservation practices uniquely tailored to benefit the state. This action proposes creation of a Louisiana Conservation Innovation Program within the LDAF to stimulate development and adoption of innovative conservation approaches and technologies that curtail and sequester GHG emissions. Research institutions, farmers, agencies, and others will be able to submit innovative conservation approaches in the program. Through partnering with USDA and others, the LDAF ~~should~~ will request funding to promote pilot projects, field demonstrations, and on-farm conservation research for the development and testing of innovative practices specific to Louisiana. ***(Associated Submitted Action Proposals: 42, 110)***

ACTION 16.2 Support the transition to regenerative agriculture and forestry practices

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
USDA-NRCS / SWCDs / LDAF	Convene farmers, ranchers, and foresters to identify barriers	Increase access to regenerative agriculture and forestry practices

Regenerative agriculture is a system of farming principles and practices that seeks to rehabilitate and enhance farm ecosystems by emphasizing soil health, water management, fertilizer use, less GHG-intensive equipment, and other best management practices. Transition to regenerative agriculture and forestry practices is essential to minimize the agricultural sector's use of fossil-fuel based equipment, to ~~GHG emissions,~~ maximize agricultural sequestration potential of best management practices, and to promote healthy soils and ecosystems. However, many barriers impede widespread transition. This action proposes that, in the short-term, LDAF and local Soil and Water Conservation Districts (SWCDs) continue to convene focus groups of farmers, ranchers, and foresters to identify barriers to adoption of various conservation practices and identify opportunities and solutions to overcome those challenges. As consensus is built around impediments to adoption of regenerative agriculture and forestry conservation practices 18.2~~18.2~~ LDAF, SWCDs, and the USDA Natural Resource Conservation Service (NRCS) should collaborate to develop a competitive grant program that offers technical and financial assistance to landowners that guide and support transition and lower barriers to on-farm conservation practices. ***(Associated Submitted Action Proposals: 88)***

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ACTION 16.3 Expand implementation of on-farm conservation plans

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
USDA-NRCS / SWCDs / Landowners	Advocate for further on-farm conservation funding	Increase access to regenerative agriculture and forestry practices

On-farm conservation plans have had the largest success in transitioning farmers, ranchers, and forest landowners to implementing conservation practices. The Louisiana Conservation Delivery Program, a partnership of the USDA NRCS and local SWCDs with individual landowners, is responsible for development of voluntary on-farm conservation plans of sustainable practices through enhancing and conserving soil, water, and related natural resources. This action proposes uplifting this successful collaboration and program through advocating for expansion of federal and state funding. With more funding, the program should incorporate and fund ~~removal of marginal lands (land that has little or no agricultural or industrial value) from production into conservation plans~~ the current backlog of eligible conservation program applications and enable more eligible working land tracts to be enrolled into conservation plans. ***(Associated Submitted Action Proposals: 38, 39)***

ACTION 16.4 Measure carbon sequestration potential of conservation farming and forestry best management practices

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Universities / LDAF / DEQ	Study ability of BMPs to reduce and sequester GHG emissions	Encourage conservation practices that sequester carbon

Best management practices (BMPs) are central in the transition to regenerative and conservation farming and forestry, ~~though their emission reduction and carbon sequestration potential have not been uniformly quantified~~and on-site emission reduction and carbon sequestration quantification technologies must be made widely available and should continuously advance. This action tasks Louisiana's research institutions to study, monitor, and publish data on the co-benefits and impacts of BMPs to abate GHG emissions, improve soil and water quality, improve natural ecosystems, and sequester carbon. We recommend this study begin immediately so that results can be incorporated into best management practices and on-farm and on-forest conservation programs implemented. ***(Associated Submitted Action Proposals: 34)***

ACTION 16.5 Establish an urban agriculture and conservation program in the LDAF

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LDAF / SWCDs	**Develop an urban agriculture and conservation program**	**Increase urban access to regenerative agriculture and forestry practices**

As expressed in prior actions, LDAF currently offers a variety of approaches to conservation through partnerships, programs, and projects through its Office of Soil and Water Conservation and SWCDs. To build on this extensive work and bring more stakeholders to the conservation conversation, this action proposes the development of an urban agriculture and conservation program within the LDAF to ensure adoption of regenerative and sustainable practices across all Louisiana landscapes. The proposed program should provide educational resources, workforce development and training, marketing assistance, and grant support for farmers, landowners, foresters, and other stakeholders in urban areas. We recommend near-term creation of this program to ensure a comprehensive and inclusive approach to conservation across Louisiana. ***(Associated Submitted Action Proposals: 88)***

ACTION 16.6 Establish regional compost facilities and accompanying local programs

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LDEQ / LDAF	**Collaborate on strategic design and locations of compost facilities**	**Increase access to regenerative agriculture practices**

Composting is an effective waste and GHG reduction measure that diverts organic materials from landfills and incinerators and converts those materials into valuable fertilizer to replenish and stabilize the soil. ~~LDEQ~~ LDAF already implements an Agriculture Solid Waste BMP Program~~, though compost is not always the use at the end of the waste stream~~. This action proposes LDEQ and LDAF partner to encourage backyard composting of yard and food waste for homeowners and restaurants, designate regional compost facilities, promote compost as a solid waste BMP, and partner with parish- and municipal-level compost programs. LDEQ should designate and fund regional compost facilities with methane waste recovery technology ~~for~~ in partnership with local entities, and LDAF should work with farmers to promote on-farm compost. Near-term implementation of these actions will increase the viability of local compost program and community gardens that further promote sustainable and local agriculture, providing resources to underserved and overburdened communities. ***(Associated Submitted Action Proposals: 154, 158, 159, 160)***

ACTION 16.7 Encourage sustainable forest management and greater use of Louisiana forest products for construction

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LFA / LDAF / DOA / LED	Convene major foresters for educational sessions	Increase access to regenerative forestry practices

Markets for wood products create incentives for landowners to plant more trees and better management forests, resulting in more carbon sequestered. Educating landowners on and establishing sustainable forestry practices ~~that~~ maximizes carbon sequestration of forested lands, ~~and how to participate~~encourages participation in carbon markets, ~~as well as~~and enhances early succession benefits and realized co-benefits to ecosystems and species. Further, implementation of a Buy Clean Louisiana policy (Action 6.1) will encourage and require ~~encouraging~~ manufacturers and end users to ~~use of~~purchase sustainably forested products in construction and consumer products, increas~~es~~ing the amount of carbon stored by trees. This action proposes LDAF's Forestry Protection Program and the Louisiana Forestry Association (LFA) partner to educate major foresters on the sustainable management of forests and the necessary steps to engage in existing carbon markets. DOA and LED should also encourage use of Louisiana forest products — lumber, plywood, paper, wood pellets, and biomass — in state capital projects and other construction projects. Cognizant of Louisiana's forestry resources and markets, it is recommended that outreach to foresters, manufacturers, and end users begin immediately for this transition to be effective. ***(Associated Submitted Action Proposals: 26, 31, 67)***

An Inclusive, Low-Carbon Economy

Three~~Two~~ strategies and ~~nine~~ eight actions detail key components to an inclusive, low-carbon economy that supports and promotes clean energy development and transition. This section focuses on how Louisiana workers and businesses are centered in the transition through accessibility of education and resources to retrain. Education, research, and innovation are another necessary focus of this section ~~that~~ and takes steps to coordinate research, train the next generation of citizens and workers, and enhance partnerships with unions and the private sector.

Strategy 17: Build a more inclusive and resilient economy for all Louisiana residents

Strategy 18: Strengthen climate education, research, and innovation as a focus of Louisiana's energy transition

Strategy 19: Prioritize Louisiana workers and businesses in the transition to a low-carbon economy

STRATEGY 17. Build a more inclusive and resilient economy for all Louisiana residents

Deliberate action is necessary to ensure that all Louisianans have equitable access to future economic opportunities and that any disruptions to the economy associated with the energy transition do not fall disproportionately on any one community. By prioritizing the success of those who have historically been excluded from the benefits of prior economic transitions and those who are most directly affected by the energy transition, the shift to a low-carbon economy can more broadly, inclusively, and equitably provide benefits throughout the state.

Highlights of how this strategy can realize benefits for Louisiana:

- *Supporting historically marginalized groups:* Targeted effort to address historical and ongoing inequities is more likely to lead to positive outcomes for the clean energy transition and for historically marginalized communities and residents, including communities of color and Indigenous peoples.
- *Strengthening the economy:* By proactively providing training and opportunities, Louisiana can ensure that people and communities historically left out of previous economic booms can be part of building Louisiana's clean energy future.

ACTION 17.1 Establish a Louisiana Plan for Economic Transition

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LED / LWC / Louisiana Technical and Community College System	**Convene stakeholders to develop vision and ambition for the transition plan**	**Support Louisiana agencies, industries, and workers in energy transition**

This action proposes the establishment of a Louisiana Plan for Economic Transition to help provide strategic direction and support to the state, workers, and small businesses as they manage overlapping economic transitions. This planning effort should conduct research and develop a statewide and regional strategies for addressing the transitions resulting from globalization and trade disruptions, rapid technological shifts such as increased automation, changes to fossil fuel prices and demand, global efforts to decarbonize the energy sector, and other challenges resulting from climate change. The Plan for Economic Transition should build upon the state's existing strengths while considering opportunities for economic development that diversify the Louisiana economy ~~while also~~and encourage~~ing~~ growth in low-carbon industries like renewable energy. It should ~~and outline~~ identify or propose educational and training opportunities and programs to support and grow Louisiana's workforce with tailored assistance for current workers in the energy industry and ~~. This planning effort would also identify specific strategies and programming to ensure that current workers in the energy industry are assisted as the energy transition occurs, and that economic opportunities are available and tailored to~~ for communities that have been historically marginalized or excluded from participating in economic advancement. This action would be a joint effort by LED, the Board of Regents, regional economic development organizations, the Louisiana Technical and Community College System, and the LWC. Together, these entities would help promote and attract new economic opportunities to the state while also preparing workers for emerging opportunities related to the low-carbon economy of the future.

STRATEGY 18. Strengthen climate education, research, and innovation as a focus of Louisiana's energy transition

To build climate leadership throughout the state, it is critical that Louisiana allocates the funding and resources necessary to build and coordinate climate education programs across the state, ~~and~~ facilitate better collaboration among research institutions that specialize in climate change mitigation and adaptation, and prepare Louisiana for national and international level research opportunities. Education, at all levels, and applied research are the foundation of a more inclusive, low-carbon economy and are critical to ensuring that the next generation is prepared, resilient, and innovative when facing future climate threats.

Highlights of how this strategy can realize benefits for Louisiana:

- *Economy and Jobs:* The national and global focus on climate change and reduction of GHG emissions will present numerous opportunities for researchers, innovators, and practitioners to apply climate-related expertise in locations outside of Louisiana and bring revenue and opportunities to the state.
- *Increasing the Likelihood of Success:* Many promising technologies to reduce net GHG emissions reductions, particularly from industrial sectors that form key parts of the Louisiana economy, have yet to be fully developed or applied at scale. Research and development to advance GHG reduction solutions is vital to achieving success as a low-carbon economy.

ACTION 18.1 Establish a Research Practitioner Partnership (RPP) Program to support climate education

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Department of Education	**Develop climate curricula and projects for K-12 education**	**Center climate education in K-12 classrooms**

This action, enabled through the Louisiana Department of Education STEM Team and the LA STEM Council, proposes a Research Practitioner Partnership (RPP) Program, led by the Louisiana Department of Education, to provide dedicated, yearly funding and support for K-12 climate education projects and development of curricula implemented by educators, researchers, practitioners, industry, and policy makers. Expansion of climate education is a critical step towards ensuring that the next generation is prepared, resilient, and innovative when facing future climate threats. This action recommends the Department of Education begin conversations with the LA STEM Council to build a framework for climate education with long-term ambition to establish the RPP Program followed by schools across Louisiana in K-12 education. ***(Associated Submitted Action Proposals: 54)***

ACTION 18.2 Teach, re-train, and employ Louisiana residents in clean energy sectors

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LWC / Universities / Community Colleges	Develop relevant education, training, and re-training courses and curricula	Guarantee job training for workers in energy transition

Training Louisiana workers is a critical step towards transitioning and growing the state's local clean energy industry. This action, enabled by the Louisiana Board of Regents and the Louisiana Workforce Commission (LWC), would create a Climate Corps Program in the LWC for local community colleges and Louisiana universities to provide education, training, and re-training necessary to support the growth of the renewable energy industry. This action would also encourage the growth of rural jobs that take advantage of natural carbon sequestration, such as encouraging employment of foresters and land managers who understand the best practices for natural carbon sequestration. ~~With the ability to utilize federal funding from President Biden's Build Back Better Framework, near~~Near-term leadership from the LWC will enable training and career track transition programs in the form of four-year degrees, two-year degrees, and industry certificate programs to be offered by universities and community colleges in the following areas: information technology, electrical engineering, utility management, and ~~electrical~~ alternative fuel vehicles (manufacturing, operations, maintenance). ***(Associated Submitted Action Proposals: 23,99, 137)***

ACTION 18.3 Coordinate climate change mitigation and adaptation research needs across Louisiana's academic, public, and private institutions

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
The Water Institute of the Gulf	Collaborate with universities to identify existing climate-related work and research gaps	Support Louisiana universities in energy transition

Louisiana's extensive research institution and university networks offer widespread expertise well-suited to inform climate action. Many research institutions are already investing in and undertaking research related to various aspects of climate action, though this research and development is often not coordinated. This action proposes centralized coordination of climate action across the public, private, and academic networks. Immediate action should be taken by the Water Institute of the Gulf (TWI), ~~designed~~ designated as the state's Innovation and Collaboration Hub, to inventory interdisciplinary climate research capabilities across the state and provide a broad understanding of existing in-state expertise in climate action to the Governor's Office. Following completion of this inventory, TWI should launch a partnership program to serve as the coordinating unit that convenes institutions to identify state research needs, discuss emerging work, and partner across universities on grant and project proposals that seek to understand existing emissions and emission reduction measures. Partners of this program would meet semi-annually beginning in 2023 to coordinate ongoing work and identify emerging opportunities for research, development, and demonstration or pilot projects for the state. ***(Associated Submitted Action Proposals: N/A)***

STRATEGY 19. Prioritize Louisiana workers and businesses in the transition to a low-carbon economy

For Louisiana to successfully shift to a low-carbon economy, the state must invest in the training and preparation that Louisiana workers need to build and maintain clean energy infrastructure and find opportunities in other industries and sectors as the economy retools. This will require targeted training and re-training initiatives, a strong commitment to the development of renewables industries, and the creation of proactive programs that ensure the successful transition of oil and gas workers to job placements in clean energy and beyond.

Highlights of how this strategy can realize benefits for Louisiana:

- *Supporting the Workforce:* The state of Louisiana is likely to see shifts in the types of industries providing employment opportunities for workers, particularly those with varying educational backgrounds. Workers can benefit from the transition to a low-carbon economy through targeted training that will equip them with the high-demand skill sets needed to deploy the strategies laid out in this plan.
- *Strengthening the Economy:* By ensuring that Louisianans have the knowledge and skill sets needed to support building and maintaining the infrastructure needed to reduce net GHG emissions, this transition can serve as an economic driver and attract future investment into the state.

ACTION 19.1 Promote and invest in Louisiana-based low-carbon industries, including specialized worker training and long-term economic development planning to recruit, develop, and retain firms and workers

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LED / LWC /Louisiana Community and Technical College System	**Invest in Louisiana-based low-carbon industry through tax incentives**	**Support Louisiana industries in energy transition**

Louisiana has many programs and investments in place to promote the existing energy industry that could be modeled or retooled to promote and invest in emerging low-carbon opportunities such as renewable energy, coastal blue carbon, low- and no-carbon hydrogen, and low-carbon fuels. For example, the technical needs of solar power generation can be different at the utility scale than the distributed scale. However, with the proper training, a worker could be qualified to work on either installation thereby improving the likelihood of maintaining steady work across utility and distributed projects. This action recommends a combination of legislative and executive actions by LED, regional economic development organizations, the Board of Regents, the Louisiana Community and Technical College System, and the LWC to adjust and propose tax incentives, worker training programs, and determine other ways to speed and smooth the transformation of the state's energy systems, workforce, and economy. ***(Associated Submitted Action Proposals: 23, 61, 93)***

ACTION 19.2 Establish and expand entrepreneurial and jobs programs in under-resourced communities to meet the needs of the energy transition

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LED	Prioritize investment in disadvantaged business enterprises and communities	Support underserved communities in energy transition

If the energy transition is to reach communities most impacted by climate change and disinvestment, Louisiana should extend the physical reach of entrepreneurial and workforce training programs specifically to these communities. Implementation of this action includes extending existing offices and programs, like the Small Business Assistance Centers run by the LED, to all communities and expanding new services specific to the energy transition for all communities (e.g., Rapid Response teams, Action **Error! Reference source not found.**). This action recommends LED identify and plan targeted outreach opportunities to assist disadvantaged business enterprises with state and federal procurement, alongside identifying business development opportunities for small businesses and workers in these communities. A combination of community- and business-based outreach will help ensure access to and widespread benefit from investments in renewable energy and other aspects of the energy transition. ***(Associated Submitted Action Proposals: N/A)***

ACTION 19.3 Enhance the Louisiana Workforce Commission's Rapid Response services to anticipate and provide tailored support to oil and gas and related workers facing job displacement and layoffs

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LWC	Assist transitioning workers through Rapid Response teams	Support displaced workers in energy transition

Louisiana has lost thousands of jobs in oil and gas over the last decade, and as the energy transition accelerates, it is inevitable that additional workers in this industry will face layoffs. To make sure that these workers are supported and assisted, this action proposes the enhancement of the Louisiana Workforce Commission's Rapid Response teams to anticipate and provide specific support and services for those facing job losses and facility closures. These Rapid Response teams should partner with the workers and their families, ensuring that the workers receive unemployment benefits, support services, and that relevant training or new job opportunities are identified. Louisiana's oil and gas workers are skilled and valued, and the state should proactively work to place them in new high-quality jobs where their skills can be used, even if not every worker can transition to the renewable energy industry. This action instructs the LWC to review its existing Rapid Response programming and make improvements so that energy workers and their families are better served throughout a changing energy and economic landscape. ***(Associated Submitted Action Proposals: 153)***

ACTION 19.4 Establish partnerships with Louisiana educational and non-profit institutions, businesses, and unions to better guarantee job placements for workers in low-~~-~~carbon training programs

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
LWC / non-profits / businesses / unions	Convene stakeholder groups for coordinated job placement	Guarantee job placement in energy transition workforce

Enrolling in a training or educational program can mean lost time, taking on personal expense, and missed wages. Still riskier is the chance that there will be no jobs available at the end of the program. This action creates partnerships between educational and non-profit institutions, businesses, and unions to better guarantee job placements for graduates of training programs in low-carbon sectors so that workers know and see that their investment to gain new skills is worth the risk. Closer coordination and improved job placements will increase the number of workers enrolled and completing training programs in clean energy and other ~~skills~~ fields needed for the energy transition and~~,~~ necessary for the successful implementation of all actions in this strategy and in~~of~~ Action 17.1. ***(Associated Submitted Action Proposals: N/A)***

Collaboration and Partnerships to Ensure Successful Implementation

Partnerships are central in successful implementation of Louisiana's Climate Action Plan. This section broadly outlines the alignment and coordination necessary for meaningful progress towards emission reduction targets, noting ~~different~~ stakeholders and their unique roles in collaboration and implementation. Key stakeholders identified in the portfolio are federal, state, and local governments; the private sector; and, ~~,~~ communities, ~~-~~ particularly those historically disadvantaged, and Indigenous peoples

- STRATEGY 20. Ensure Louisiana is prepared to maximize potential federal funding opportunities
- STRATEGY 21. Position Louisiana as a climate leader by engaging in national and regional dialogues and planning
- STRATEGY 22. Align climate action approaches across state government
- STRATEGY 23. Coordinate action with local government
- STRATEGY 24. Call upon the private sector to align their practices and play a leading role in climate action
- STRATEGY 25. Improve engagement with and track progress on outcomes for disadvantaged communities and Indigenous peoples

STRATEGY 20. Ensure Louisiana is prepared to maximize potential federal funding opportunities

With passage of the 2021 Infrastructure Investment and Jobs Act ~~alongside continued momentum around President Biden's Build Back Better Framework~~, numerous federal opportunities exist in the coming years for increased funding for climate mitigation and resilience initiatives across all ~~emission~~ sectors of the economy and benefitting all of the Task Force's ~~and~~ fundamental objectives. Louisiana's efforts to utilize allocated funding and to compete for available federal resources should be coordinated across agencies to maximize the potential for success and the realization of ~~many~~ goals and values established in this ~~of the~~ Climate Action Plan. This coordination should be led through the Office of the Governor with leadership and input from departments identified as eligible applicants or recipients. Federal funding is imperative for Louisiana's successful transition to a low-carbon economy, so Louisiana must be proactive in advocating for increased federal support, ~~inclusive~~ including but not limited to the following priority areas:

- Converting public fleets and heavy-duty vehicles to zero-emission vehicles and the~~;~~ buildout of electric vehicle infrastructure (SA# 158, 162, 29, 27, 36, 137)
- Plugging, remediating, and reclaiming orphaned wells (SA# 166, 167, 168)
- Expanding monitoring of methane and other GHGs (SA# 91, 151)
- Measuring, monitoring, and enhancing natural wetland carbon sequestration (SA# 59, 60)
- Pre-disaster mitigation and community-focused resilience (SA# 152)
- 45Q tax credits for industrial carbon capture and sequestration (SA# 109, 120, 121)
- 45Q ~~-~~equivalent tax credits for industrial ~~scale~~ electrification
- Hydrogen Hubs and Direct Air Capture Hubs
- Accelerating offshore wind ~~opportunity~~ development in Louisiana (SA# 61, 101)
- Attracting and retaining clean energy industries and investments (SA# 29)
- Investing~~ments~~ in energy efficiency improvements and weatherization programs (SA#119, 162, 16, 177)
- Expanding programs that assist workers displaced by climate or energy transitions (SA# 153, 23)
- Advocating for a streamlined federal acknowledgement process for Louisiana tribes
- Investing in statewide broadband (SA# 25)
- Sustainable and regenerative agriculture, forestry, and soil management

Highlights of how this strategy can realize benefits for Louisiana:

- *Reducing the Cost of Transition:* Federal funding can offset some of the costs of a transition to a low carbon economy, reducing the state and private investment needed to implement the strategies and actions contained in this plan.
- *Quality of Life:* Federal programs can help catalyze the broader social, economic, and health benefits associated with the strategies and actions of the Louisiana Climate Plan, such as the reduction of pollution ~~resulting from~~when vehicles are electrified ~~vehicle electrification~~ and the capping of orphan methane wells.
- *Ensuring Effectiveness and Durability:* Positioning Louisiana to capitalize on Federal resources expands the resources available to support plan implementation into the future.

STRATEGY 21. Position Louisiana as a climate leader by engaging in national and regional dialogues and planning

Partnerships are essential to make meaningful progress towards Louisiana's targets. Regional partners are necessary to advance carbon pricing systems, electricity transmission planning, offshore wind development, regional transit connectivity, and climate adaptation. This strategy recommends that Louisiana initiate and participate in discussions with other states to: a) establish a regional, if not national, cap-and-trade or carbon tax program, b) intentionally plan for the expansion of electrified transmission infrastructure and offshore wind development, c) strategize transit connectivity ~~of~~ between interstate communities, and d) set goals ~~towards~~ for building climate resilience with states facing similar threats. Regional partnerships are essential to reduce incidence of carbon leakage and to ensure states collaborate in working towards similar goals. However, state-level action is not sufficient alone to lead economy-wide transitions. Local and national partners are also essential to secure funding and ensure support for the state's goals and to pilot ~~nationwide~~ nationally significant initiatives that move the country towards carbon neutrality. In addition to federal priorities mentioned ~~above~~in Strategy 20, this strategy also recommends Louisiana pursue interstate and intercity partnerships and the sharing of lessons learned from other states and cities.

Highlights of how this strategy can realize benefits for Louisiana:

- *Ensuring Effectiveness and Durability:* Through proactive engagement with federal and state partners, Louisiana can help shape the discussion on the national stage to support strategies and actions that require federal policy shifts—or infrastructure updates—for successful implementation.
- *Strengthening the Economy:* Louisiana can become a leader in a global transition to a low-carbon economy. Engagement and leadership at the regional and national scale can help ensure that the potential economic benefits of state leadership are realized, such as the development of infrastructure for transmission of renewable energy generated within and offshore of Louisiana.

STRATEGY 22. Align climate action approaches across state government

A whole-of-government approach ~~within~~ across Louisiana is necessary to advance state emission reduction actions. The Governor's Office will encourage cross-agency collaboration and alignment, the setting of climate-related goals within individual agencies, and the strengthening of partnerships with local government, communities, and Indigenous peoples to ~~coordinate and~~ carry out actions that cross and extend beyond agency jurisdictions. As ~~the central implementer~~key implementers of this Climate Action Plan, state agencies must maintain alignment and function as a coordinated unit for climate action to be successful. The Governor's Office will also seek to collaborate with other state entities such as the LPSC, LDAF, and the Louisiana Legislature.

Highlights of how this strategy can realize benefits for Louisiana:

- *Timely Implementation:* Through close coordination of state agencies, the strategies and actions of the Climate Action Plan can be implemented as quickly and efficiently as possible, resulting in faster realization of benefits for the people of the state.
- *Durability and Long-Term Success:* The net GHG emission reduction strategies and actions in this plan span across sectors that are supported or regulated by multiple state agencies. Close coordination of those agencies ensures that new policies, incentives, and regulations are complementary and effective in reducing net GHG emissions and providing other benefits to Louisiana, while also streamlining implementation.

STRATEGY 23. Coordinate action with local governments

Local governments are significant collaborators and implementers of climate action within their jurisdictions. State partners must work alongside local government to encourage local climate action planning that complements Louisiana's Climate Action Plan, reduces emissions locally, enhances economic activities, and advances equity around local concerns as climate mitigation activities are implemented. Alongside engagement with communities on climate change emissions, parishes and municipalities will work to build community awareness, enhance safety~~safer regulation~~, identify sufficient funding, and collectively implement~~ation of~~ equitable disaster planning and recovery across the rural to urban gradient.

Highlights of how this strategy can realize benefits for Louisiana:

- *Enhancing the Local Benefits of Climate Action:* Active engagement of local government can help ensure that individual communities fully realize the potential economic, societal, and health co-benefits of a low-carbon economy transition.
- *Increasing Public Trust:* The close ties that local government has within the community provide the most direct connection to the people of Louisiana and therefore the most effective avenues of enhancing community outreach and engagement.

STRATEGY 24. Call upon the private sector to align their practices and play a leading role in climate action

Businesses are crucial partners for developing innovative and technical solutions to reduce emissions and critical sources of resources to meet environmental goals. The Governor's Office and state partners must work with and engage in continuous solution-building with the private sector and regulated utilities to implement the actions set forth in this Climate Action Plan. This ~~can~~ should be done through direct engagement with business leaders to support mutually beneficial steps toward climate action and by the establishment of ~~entities~~ an entity capable of leveraging public and private dollars for the implementation of climate mitigation and adaptation initiatives, such as~~like~~ a Resilience Fund. ~~A Louisiana Resilience Fund should leverage public and private dollars for the implementation of climate mitigation and adaptation initiatives, particularly for underserved low carbon and resilient financing markets.~~ Similar institutions around the country have been used to provide bridge loans for renewable energy projects and energy efficiency retrofits, direct financing for community solar, and credit enhancement to increase the willingness of private actors to provide capital for resilience projects.

Highlights of how this strategy can realize benefits for Louisiana:

- *Strengthening the Economy:* Louisiana-based technological and industrial solutions necessary for successful implementation of multiple actions within the Climate Action Plan can be marketed and deployed nationally and globally.
- *Enabling Timely Implementation:* Technological innovation is vital for reducing net GHG emissions from the industrial sector. Given the high percentage of emissions that result from industrial processes within the state, the timeliness of success is closely tied to the development of effective solutions by the private sector.
- *Facilitating Implementation:* Leveraging public dollars to attract private investments through a specialized entity, like a Resilience Fund, can expand the number and types of projects that can be implemented and the speed of realized benefits from the implementation of climate mitigation actions.

STRATEGY 25. Improve engagement with and track progress on outcomes for disadvantaged communities and Indigenous peoples

Disadvantaged communities and Indigenous peoples must be at the center of collaboration and partnership in the development and implementation of climate action. In next steps of ~~development~~implementation, this ~~action~~ strategy tasks the CITF with ensuring actions set forth in this Climate Action Plan create new opportunities for and benefits to disadvantaged communities and Indigenous peoples, particularly those historically marginalized, those who face disproportionate climate impacts, and those of low-to-moderate income. While next steps are being implemented, ~~In implementation~~, this ~~action~~ strategy tasks the CITF with enabling and encouraging communities and Indigenous peoples to engage in knowledge sharing, solution building, and decision making. This action further tasks the Governor's Office and state agencies with investing in ~~sustainable~~ the sustained two-way communication of needs and progress with Indigenous peoples and marginalized communities.

This approach to engagement can be seen specifically in Actions within this plan, such as Actions 13.1 (Retrofitting Buildings and Homes), 18.2 (Clean Energy Job Training), 19.2 and **Error! Reference source not found.** (Targeting Job Placements and Energy Transition Opportunities), and 26.3 (Incorporating Environmental Justice into Statewide Siting Planning). The outreach and community consultation ~~as part of~~within these Actions will be a starting point for ~~a programmatic approach to~~ engagement that centers these communities in the state's climate plan implementation. Further, all actions should respect tribal treaty rights and similar tribal rights.

Though these actions set forth ambition, tracking outcomes is paramount to make meaningful progress on community-centered approaches and engagement in climate actions. Effective quantitative metrics of the distribution of resources, or the prevalence of inequality – such as the rate of distribution of poverty or of the GINI coefficient – alongside metrics of health, housing, and education must be explored and used as tools to track implementation of climate actions and include in annual progress reports.

Highlights of how this strategy can realize benefits for Louisiana:

- *Supporting Historically Marginalized Groups:* Meaningful engagement of—and leadership by—disadvantaged communities and Indigenous peoples is critical for achieving widespread success and equitable outcomes of a low carbon transition.
- *Preservation of Culture and Cultural Resources:* Indigenous people and communities have the greatest understanding and ties to cultural resources, and incorporating their input into action implementation will help ensure that the rich cultural history of the state is preserved.

Accountability and Adaptability to Ensure Lasting Success

This final section contains two strategies that will ~~intended to~~ ensure the long-term success of the state's climate mitigation efforts. ~~By establishing the Governor's Office of Climate Resilience~~Through longevity of the CITF and a dedicated staff, the Climate Action Plan strategies can be effectivelyand transparently implemented. ~~Once the initial office is formed and strategies are underway, long~~Long-term monitoring ofGHG emissions will be a top priority to ensure the state is on track to meet GHG reduction goals. As investments in newtechnology become more feasible and models change, the GHG inventory and Climate Action Plan must also be updated so that Louisiana's climate actions are based on the best available science and are responsive to changes in the marketplace and conditions here on the ground

- STRATEGY 26. Advance an equitable, efficient, and sustainable siting and permitting process for new energy and infrastructure projects
- STRATEGY 27. Ensure that Climate Action Plan strategies are effectively and transparently implemented
- STRATEGY 28. Track progress in reducing net GHG emissions reductions and adapt the approaches taken as needed

STRATEGY 26. Advance an equitable, efficient, and sustainable siting and permitting process for new energy and infrastructure projects

Implementation of this plan will require the modification of existing energy infrastructure and the construction of new energy and infrastructure projects, such as renewable energy generation (e.g., solar farming, offshore wind), expanded electricity transmission infrastructure, vehicle charging stations and ~~battery~~ energy storage, and CCUS facilities and pipelines. Our state's siting and permitting processes must be updated to ensure that new projects are safely and equitably developed. Meeting our climate goals will also require revisiting Louisiana's existing practices and regulations that guide the development of new and expanded industrial facilities. This strategy aims to ensure that new projects align with Louisiana's climate action goals, mitigate adverse impacts to communities and environments now and into the future, and incorporate environmental justice considerations.

Highlights of how this strategy can realize benefits for Louisiana:

- *Human and Environmental Health:* Amending permitting and siting regulations to reflect Louisiana's emission reduction targets will mitigate impacts to air quality throughout the state. Additionally, the development of new permitting and siting processes that prioritize environmental justice and consider the needs of marginalized communities that have been disproportionately impacted by pollution-related health impacts will improve public health outcomes.
- *Community Engagement:* Community input into revised permitting and siting practices is necessary to ensure the updated processes are equitable and sensitive to the needs of groups who have historically been marginalized.
- *Timely Implementation, Durability, and Long-Term Success.* Updating permitting and siting processes to be more streamlined enables the fastest implementation of actions requiring new infrastructure. At the same time, aligning those processes to support net-GHG emission reductions and other objectives associated increases the likelihood of long-term success.

ACTION 26.1 Increase the resources and staffing capacity of participating state agencies to plan for, oversee, and monitor the deployment of new clean energy technologies and infrastructure

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Legislature / DOA	**Invest increased resources in implementing agencies**	**Maximize effective implementation of the Action Plan**

DNR's jurisdiction over utility-scale solar and wind energy on state lands and water bottoms makes the agency central in deployment of clean energy in Louisiana. This action recommends DNR guide the development of a process to assess, monitor, and make regulatory determinations on development of CCS, CCUS, and clean/renewable energy infrastructure technologies (e.g., solar farming, transmission lines, offshore wind). Specifically related to CCS and CCUS, a new and unique set of research and technology needs have been identified for DNR alongside monitoring needs from DEQ. Prior to the permitting of any projects, this action requires an internal audit of the deploying agency to ensure that it is

adequately funded and prepared to assess, monitor, and make regulatory determinations for the specific project (e.g., related to geologic storage in the development and maintenance of CCS well sites). This action also supports increased capacity of DNR and DEQ to monitor potential air quality impacts, leaks at CCS well sites, complications of underground storage, and others. Since proposed clean and renewable energy infrastructure projects currently are undergoing the permitting process, this action proposes state funding be allocated to DNR and DEQ in the near term. ***(Associated Submitted Action Proposals: n/a)***

ACTION 26.2 Solicit a study to more comprehensively understand potential impacts of CCUS technology and infrastructure on communities, ecosystems, and cultural resources to inform siting and permitting deployment

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Universities / DNR	Prioritize federal and state research funding for CCUS analysis	Maximize effective implementation of the Climate Action Plan

With Louisiana's extensive geologic storage potential and federal incentives for near-term investment, Louisiana is seeing significant interest and investment in the deployment of CCUS to address industrial GHG emissions. Members of the Task Force and the public have raised concerns related to the capture process at facilities, transport through pipelines, and geologic storage underground. To address these concerns, this action recommends the state, through leadership of DNR, and its research institutions synthesize existing research on CCUS and disseminate information and materials for public education. The state and its research institutions should also ~~promote~~ fund a comprehensive understanding of CCUS impacts, including but not limited to siting impacts on cultural characteristics of neighboring populations, air quality impacts on nearby communities, increased energy intensity for different industry processes, pipeline safety implications, environmental and resilience impact of pipeline buildout, potential incidents of geologic storage, and long-term risks and costs. ***(Associated Submitted Action Proposals: N/A)***

ACTION 26.3 Collaboratively develop regulatory frameworks and statewide siting plans for new energy technologies with considerations for both climate and environmental justice

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Governor's Office / State Agencies	Establish an interagency working group to develop pre-permitting environmental siting analysis	Ensure safe and resilient siting of energy infrastructure for the environment and communities

For emerging energy generation and emissions reduction technologies in Louisiana (e.g., solar farming, offshore wind, CCUS), there is opportunity to ground the permitting and siting frameworks around the Fundamental Objectives identified in Louisiana's Climate Action Plan. In anticipation of the significant investment in and deployment of large-scale low- or no-carbon technologies, this action establishes an interagency working group that, with the benefit of robust public input particularly from those who face disproportionate climate and environmental impacts, will engage in a prospective, pre-permit siting analysis. One of the primary goals of this action is to ensure that future permitting and siting decisions for the above-mentioned emerging technologies are consistent with the Fundamental Objectives of Louisiana's Climate Action Plan; ~~and~~ address the potential impacts on and preferences of nearby communities, environmental impacts, and environmental justice considerations; and are made with respect for tribal treaty rights. To the extent possible, this effort would seek to identify areas where the necessary conditions (solar, atmospheric, geologic, and economic) for a given

technology are highest and the potential for conflicts or adverse impacts (health, environmental, economic) are lowest. ***(Associated Submitted Action Proposals: 46, 92, 96)***

ACTION 26.4 Update existing permitting and facility siting practices and regulations to align with Louisiana's emission reduction goals

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Governor's Office / State Agencies	Establish an interagency working group to review existing siting and permitting procedures	Ensure safe and resilient siting of energy infrastructure for the environment and communities

Currently, the construction of new and expanded industrial facilities are handled by multiple state agencies with multiple permit guidelines depending on the nature of the technology and the location of the proposed facility. All such decisions must be made in accordance with Article IX, §1 of the Louisiana Constitution, which serves as the basis for what is known as the "Public Trust Doctrine." However, varying agency priorities, regulatory nuances, and administrative or judicial decisions have led to a complex and at-times disjointed process. Additionally, siting decisions are made on a permit-by-permit basis without having the benefit of a comprehensive statewide plan or framework, as addressed by Action 26.3. Members of the Task Force and the public have raised concerns about the ability of current permitting regulations to fully integrate the most recent understanding of climate impacts and environmental justice concerns. Via executive order (EO), the Governor should mandate that all project, permitting, and facility siting decisions align with goal of net zero GHG emissions by 2050 and consider opportunities to practicably avoid or minimize GHG emissions. This action would include convening an interagency panel (including DOA, DOTD, DEQ, DNR Office of Conservation, DNR Office of Coastal Management (OCM), LDAF, CPRA, Department of Wildlife and Fisheries (LDWF)) with the benefit of robust public input, particularly from those who face disproportionate climate and environmental impacts, to review and update projects, regulations, and permitting practices to ensure that project, permitting, and siting decisions are climate neutral and are not exceeding the cumulative risk burden on vulnerable communities, tribal lands, or the environment. With the ultimate goal to streamline permitting processes, this action ensures efficient and strategic development of energy infrastructure that benefits all participating stakeholders. ***(Associated Submitted Action Proposals: 46)***

STRATEGY 27. Ensure that Climate Action Plan strategies are effectively and transparently implemented

Realizing lasting success in reducing net GHG emissions reductions and ensuring positive overall benefit to the state requires that the actions and strategies outlined here translate to meaningful change. This success must be founded on continued transparency as well as regular monitoring and oversight of plan implementation. Actions under this strategy are designed to maintain that transparency and oversight, ensuring that the people of Louisiana can have confidence that the economy, environment, and their well-being will be maintained and improved while GHG emissions are reduced.

Highlights of how this strategy can realize benefits for Louisiana:

- *Effectiveness and Durability:* Establishing mechanisms for active management and public engagement of Climate Action Plan implementation ensures that actions in the plan are carried out as intended.
- *Public Confidence:* The confidence of the public in the effectiveness and outcomes of the Climate Action Plan – and support for its continued implementation – relies on transparency in execution and clear accountability of the state's progress towards its GHG emission reduction goals.

ACTION 27.1 Establish a statutory and organizational framework for coordinating and implementing statewide climate resilience

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Legislature / Governor's Office	**Develop and workshop a governing framework for climate resilience**	**Ensure long-standing and adaptive implementation of the Action Plan**

Climate change mitigation and adaptation require extensive coordination across multiple stakeholders inside and outside of government. It also requires focus and authority to oversee the implementation of this plan and assess progress toward meeting the Governor's GHG emission reduction goals. In the near-term this action proposes that the Edwards administration work with the Louisiana Legislature to create a statutory and organizational framework to staff, coordinate, and implement continued management of climate and resilience initiatives and ensure the successful implementation of the actions contained in this Climate Action Plan. Through this organizational framework, the Governor, his staff, and cabinet members and agencies would receive advice on action related to climate mitigation and adaptation to ensure vision and action for decarbonization are threaded across the Administration. This near-term action prepares the Administration to advocate for a ~~more~~ permanent ~~framework~~ office, such as a Governor's Office of Climate Resilience, that governs and staffs climate change mitigation and adaptation across agencies, levels of government, and external stakeholders.

ACTION 27.2 ~~Legislatively establish~~Ensure that the Climate Initiatives Task Force continues over the short-, medium-, and long-term to steer and oversee efforts to achieve the ~~and support for~~ statewide goal of net zero GHG emissions by 2050

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Legislature / CITF /Governor's Office	Develop a public governing body for effective climate resilience	Ensure long-standing and adaptive implementation of the Action Plan

Alongside a designated office ~~organizational framework~~ to coordinate and oversee climate and resilience initiatives across the State of Louisiana, the longevity of the CITF is necessary to ensure public coordination and oversight of climate and resilience actions. Upon adoption of the 2022 Climate Action Plan, the CITF should convene at least quarterly each year ~~Formally recognizing and establishing the CITF in statute would enable regular CITF meetings~~ to ensure progress is made towards the implementation of emission reduction strategies and actions; the impacts of these actions on the people, environment, and economy of Louisiana are understood; transparency and accountability are maintained; and the critical issue of climate change in Louisiana remains in focus across changes in executive leadership. Regular meetings of the CITF ~~would~~ are necessary to chart progress on implementation of the climate mitigation efforts, provide a forum for public engagement and oversight, and identify opportunities to increase the effectiveness of action implementation. To ensure longevity of the CITF beyond administrations, the CITF should be established in statute with this meeting regularity and with objectives mirroring those of this action. This statute of the Task Force should also legislatively establish the goal of carbon neutrality by 2050. ~~Creating the CITF in statute requires near-term legislative enablement to ensure efforts to meet the Governor's emission reduction goals remain central for the state for years to come.~~

STRATEGY 28. Track progress in reducing net GHG emissions reductions and adapt the approaches taken as needed

Another vital component to catalyzing the success of the Climate Action Plan is monitoring the progress of the actions and strategies in driving net GHG emissions reductions. In addition, these outcomes must be used as part of a data-driven approach to revisit and update the Climate Action Plan over time through an adaptive management process. Actions that have proven successful can be continued as part of this process, while actions that have not been as impactful in practice as anticipated can be refined or updated. Implementation of actions under this strategy will ensure that there is a framework for making updates to the Climate Action Plan and for collecting the data and information necessary to make adaptive management decisions.

Highlights of how this strategy can realize benefits for Louisiana:

- *Flexibility and Adaptability:* New technologies, processes, approaches, and programs aimed at reducing net GHG emissions can be incorporated into this Climate Action Plan as they become available. Demonstration of new technologies and approaches at an operational scale via pilot projects can serve as an important first step.
- *Continued Success:* By using data to monitor progress in the near-term, the trajectory of Louisiana towards meetings its goals can be objectively tracked. Tracking and evaluation of this Climate Action Plan over time can also identify and strengthen the most effective actions and strategies as part of reaching the state's long-term goals. As a living plan, adaptive management of all strategies and actions is key for long-term success in an uncertain future.

ACTION 28.1 Establish a Louisiana GHG monitoring program

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
DEQ	**Create a GHG Monitoring Program**	**Hold implementers accountable in incremental GHG reductions**

Regular collection of GHG data across the state is vital to providing checkpoints on GHG reduction to adaptively manage emission reduction approaches across all sectors. This action directs immediate creation of a GHG Monitoring Program by DEQ to collect GHG data across all emission sectors, which will be used in conjunction with regular updates of the GHG inventory. The GHG Monitoring Program should utilize real-time, continuous data collection technologies that can be directly assessed by DEQ where feasible. As mentioned in prior actions, the GHG monitoring program will incorporate detailed data for specific sectors, including utility climate rankings (Action **1.**), carbon intensity product audits and emission ~~audits~~ reporting from facilities (Action 3.1), and the methane monitoring stations (Action 10.2). Immediate integration of and regular updates to these detailed datasets is essential for tracking progress, ensuring accountability, and repairing leaks across high-intensive emission sectors. In addition, this action would facilitate benchmarking that could be used to determine whether the strategies and actions included in the Louisiana Climate Action Plan are effective once implemented.

ACTION 28.2 Update the state GHG inventory every five years

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
Legislature / DEQ	Ensure mandatory, consistent updates to the GHG inventory	Hold implementers accountable in incremental GHG reductions

In conjunction with regular collection of GHG data (Action 28.1), updates to the GHG inventory are necessary to consistently monitor progress and hold the state accountable for progress towards reduction goals. This action tasks the Louisiana Legislature to statutorily mandate updates to the GHG inventory every five years with consistent funding to support these efforts, with the ability of the CITF to request a GHG inventory sooner than five years if the technology has significantly improved. Additionally, this action supports work by the state to continue to increase the accuracy of this assessment as technologies evolve. The U.S. EPA State Inventory Tool (SIT) model has been used as the primary information source for inventory updates, but this methodology has known and acknowledged limitations. This action proposes building upon existing methods, as the EPA SIT, and investing ~~investment~~ in emerging technologies, such as remote sensing, satellite imagery, carbon storage of natural sinks, and other tools, to provide more accurate and comprehensive monitoring of GHG emissions in Louisiana. This data will allow for~~, as well as incorporating~~ more continuous and location-specific data from the GHG monitoring program (Action 28.1) and criteria pollutants monitored by the existing DEQ Air Quality Monitoring Program into the GHG inventory.

ACTION 28.3 Update the Louisiana Climate Action Plan every five years

IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	GOALS
CITF / Legislature / Governor's Office	Ensure mandatory, consistent updates to the Action Plan	Hold implementers accountable in adaptive management of the Action Plan

The strategies and actions outlined in the Louisiana Climate Action Plan have been selected based on their expected effectiveness in reducing net GHG emissions while also having the best anticipated outcomes for the state and its people. Regular GHG monitoring (Action 28.1) and updated GHG inventories (Action 28.2) will reveal where those actions are effective, while at the same time new strategies or actions may become available due to advances in technology or increased understanding of the most effective approaches in net GHG emission reduction. Therefore, the Climate Action Plan should be updated one-year following each updated GHG inventory (Action 28.2). Through near-term legislation, this action would allow and require updates to Louisiana's Climate Action Plan every five years by the Governor's Office to ensure that climate action continues to be based on the best available science and that the actions taken demonstrate benefits to Louisiana's communities, environment, and economy to the greatest extent possible. Planned updates are necessary to ensure ineffective actions could be modified or replaced, the greatest investment is in the most effective approaches, and new technologies could be incorporated when available.

Next Steps and Adaptive Management of Louisiana's First Climate Action Plan

This Climate Action Plan lays out 28 strategies and 84 actions to meet Louisiana's 2050 goal of carbon neutrality. Strategies set forth provide high-level vision, intended to be consistent across timescales, while actions represent policy-specific steps towards emission reduction. Actions take a comprehensive approach to mitigate GHG emissions as best determined in 2021, but as technologies, markets, and stakeholder preferences continue to evolve, actions will need to as well.

Through utilizing the EPS Tool, this Action Plan indicates EPS policies with the greatest impact to drive down GHGs, particularly industrial-scale electrification, renewable generation, and industrial fuel switching to low- and no-carbon hydrogen. However, the model lacks granularity where Louisiana's inventory also lacks granularity, leaving a range of uncertainties in certain sectors. Notable gaps are in methane monitoring and reporting, natural carbon sequestration potential by habitat type, source and sink of emissions in agriculture, forestry, and coastal management practices, carbon pricing design, transportation policy modeling, and other forms of low- and no-carbon hydrogen production. These gaps do not infringe on the efficacy of the Action Plan but offer primary areas where modeling needs to be refined and actions made more accurate.

Alongside academic research solicited in individual action descriptions, cross-action information gaps require intentional study to inform deployment at scale. Acknowledging its impact on emission reduction, particularly prevalent is the pairing and sequencing of renewable and clean electricity generation with industrial electrification, together with the need to identify facility-level electrification potential. Other information gaps arise in understanding the current landscape and needed improvements in the regulatory environment, sequencing the energy transition with bolstering the clean energy job pipeline, and timing of industrial fuel-switching to low- and no-carbon hydrogen.

These gaps in understanding, modeling, and sequencing of GHG-reducing actions serve as starting points to bridge gaps of and strengthen the Action Plan. As this information is better understood, in conjunction with more accurate GHG accounting through the GHG monitoring program and GHG inventory updates, the Task Force must review, revise, and amend the Climate Action Plan every five years.

In addition to reviewing and commenting on statewide GHG accounting, the Task Force was created to balance interests and maximize fundamental objectives set forth at the beginning of this effort. Diverging opinions within the Task Force have primarily arisen from how to balance these objectives. Though discussions have begun, more work must be done to continue sharing values, understanding perspectives, and finding balance in policy recommendations. Additional research must be done to account for impacts to fundamental objectives in the implementation of this Action Plan. Relevant to improving quality of life and creating a more equitable society, mechanisms to meaningfully measure improvements in equity, community engagement, public health, and quality of life are essential to accountability. Relevant to the economy and workforce, further understanding of implications on ratepayers and customers must be better accounted for and incorporated into updates of the Action Plan. Similarly, as the impacts of climate change are increasingly felt across Louisiana, conservation of natural resources and climate adaptation must be aggressive but responsive.

In summation, this Action Plan represents a bold step forward for Louisiana to meet its 2050 goal of carbon neutrality but requires continual effort to implement, adaptively manage, and better understand climate solutions. The Governor's Office shall maintain a central role in chairing and staffing the Climate Initiatives Task

Force to continue discussions of the Task Force, hold implementers accountable, update the Climate Action Plan, and urge ambition to meet the Governor's emission reduction goals. Alongside regular meetings of a long-standing Task Force and updates to the Climate Action Plan every five years, agencies and other implementers should formally report out to the Task Force each year with progress towards near-term action and longer-term goals. This first iteration of Louisiana's Climate Action Plan is intended to serve as a catalyst for continued bold action by all implementers – current and future – now through 2050.

Implementation Matrix

ACTION NUMBER	IMPLEMENTATION PARTNERS	NEAR-TERM ACTION	FUNDING NEEDED ☒	GOALS
		CLEAN ENERGY TRANSITION		
1.1	PSC / utilities	Establish a RCPS	☒	100% renewable or clean by 2035, at least 80% from renewable sources
1.2	PSC / utilities / Governor's Office	Engage in Entergy Louisiana, LLC and Cleco Power LLC IRP process in 2022	☒	Encourage generation of renewable power
1.3	PSC / utilities / industry / LED / DNR / universities	Prioritize offshore wind strategic planning for outreach, workforce, and impact assessments	☒	5 gigawatts of offshore wind generation by 2035
1.4	PSC / utilities	Establish tariff offerings for renewable and clean power	☐	Encourage purchasing of renewable power
1.5	PSC / utilities / industry	Understand implications of deregulated power	☒	Encourages generation of renewable power
1.6	PSC / utilities / MISO / SPP / DNR	Assess infrastructure needs to plan renewable connectivity	☒	30% increased transmission infrastructure by 2030 and 100% by 2050
1.7	PSC / utilities / DNR Office of Energy	Solicit funds for energy storage pilot projects	☒	100 megawatts of energy storage by 2030

1.8	PSC / utilities / DEQ	Assess gaps and synthesize existing data on generation	☒	Encourage generation of renewable power
2.1	Legislature	Reinstate incentives for renewable installation and storage	☒	Encourage purchasing of renewable power
2.2	PSC	Review net metering policies	☒	Account for value of distributed solar generation
2.3	FEMA / GOHSEP / Louisiana National Guard	Plan and implement microgrids and dispatchable battery units	☒	Speed post-disaster recovery and resilience
2.4	PSC	Determine best mechanisms for third-party generation to sell energy back to the grid	☒	Encourage generation of renewable power

INDUSTRIAL DECARBONIZATION

3.1	DEQ / EPA / Industry	~~Compile, calibrate, and assess gaps of~~Accurately account for ~~existing data from~~ facility-level emissions and product carbon intensity~~ies~~	☒	Provide facility-specific accountability in emission reduction
3.2	DEQ / Industry	Develop a framework for facility-level GHG reducing plans	☒	Provide facility-specific support in emission reduction
3.3	DEQ / Legislature / Governor's Office	Identify carbon pricing mechanism best suited for Louisiana	☒	Provide facility-specific accountability in emission reduction
3.4	DEQ / DNR	Develop a Net Zero Industry Standard ~~n implementation strategy for this Section~~	☒	Ensure ~~coordinated implementation of industrial decarbonization~~net zero for industry by 2050

4.1	DNR	Pursue rulemaking for implementation of efficiency standard	☐	Reduce energy intensity of industry
4.2	DNR / LSU-IAC	Assess needed support for implementation of efficiency standard	☒	Support reduced energy intensity of industry
5.1	LED / DNR / PSC / Governor's Office / Industry	Invest in mechanisms to accelerate industrial electrification	☒	Abate industry emissions through electrification to the extent practicable
5.2	DNR / US-DOE / Industry	Invest in research and demonstration projects to accelerate fuel- and feedstock- switching	☒	Abate heavy industry emissions through alternative feedstocks and fuels to the extent practicable
5.3	DNR / US-DOE / Industry / Communities	Invest in research for siting and impact assessments of CCUS buildout	☒	Abate remaining high-intensity emissions through carbon capture and storage
5.4	Universities	Solicit funding to understand utilization techniques	☒	Recycle emissions through utilization of captured carbon
5.5	US-DOE / DEQ / DNR / PSC / Utilities / Industry / Communities	Strategically plan decarbonization of industrial clusters	☒	Provide cluster-specific support in emission reduction
6.1	DOA	Secure green vendors through procurement practices	☒	Reduce GHG footprint of state government while growing market for clean and green products
6.2	DEQ / Waste Management Entities / NGOs / Universities	Invest in pilot projects to reduce lifecycle emissions of products	☒	Minimize wasted energy through circular principles

ACTIVELY MANAGE METHANE EMISSIONS

7.1	DNR / Legislature	Pursue rulemaking to tighten the definition of "responsible party" and establish a companion database	☒	Provide clarity and accountability for responsible parties
7.2	DNR / Legislature	Pursue legislation to raise financial security and remove blanket securities	☐	Incentivize compliance with operator requirements
7.3	DNR / Legislature	Pursue rulemaking to tighten the definition of "future utility"	☐	Provide clarity and accountability for inactive wells
7.4	DNR	Invest in workforce training programs for monitoring and plugging wells	☒	Provide Louisiana workers opportunities to transition
8.1	DNR / DEQ	Pursue rulemaking to align with methane rules of other states and the EPA	☒	Reduce amount of methane released
8.2	DEQ	Incorporate emerging technologies into methane monitoring	☒	Monitor methane releases with more frequency and accuracy
8.3	DEQ / DNR / US-EPA	Strengthen LDAR best practices to monitor and fix malfunctioning practices	☒	Repair methane releases with more frequency and accuracy
		TRANSPORTATION, DEVELOPMENT, AND THE BUILT ENVIRONMENT		
9.1	DOA	Update procurement practices to meet public fleet transition goals	☒	Transition 50% public fleets to low- and zero-emission vehicles and fuels by 2035 and 100% by 2050

9.2	DOTD / NGOs / MPOs / Local Governments	Utilize federal funding to intentionally build out infrastructure	☒	250 electric vehicle charging stations per 100,000 residents by 2050
9.3	DOTD Transportation Research Center	Research efficacy of alternative fuels to decarbonize heavy transit	☒	Research and deploy at scale solutions to decarbonize freight
9.4	DOTD / DNR / DEQ	Identify and pursue pilot projects to decarbonize heavy transit	☒	Research and deploy at scale solutions to decarbonize freight
10.1	DOTD / MPOs / Local Governments	Utilize multiple mechanisms to implement VMT reduction strategies	☒	Double use of alternative modes of transportation by 2035
10.2	BEL Commission	Leverage federal funding for expansion of broadband access	☒	Reduce vehicle miles traveled through at-home resources
10.3	DOA	Adopt a statewide hybrid workplace policy	☐	Reduce vehicle miles traveled through at-home resources
10.4	DOA	Pursue rulemaking to require telematics for fleets	☒	Maximize efficiency of GHG-producing vehicles
10.5	DOTD / DOA / LED	Invest in research of smart transit techniques and best practices	☒	Maximize efficiency of energy-intensive freight transit
11.1	DOTD / Regional MPOs / Municipalities / Legislature	Leverage available funding for urban transit deserts and local jurisdictions	☒	Reduce VMTs through connectivity within urban areas
11.2	DOTD / Local Governments / Rural Transit Providers	Develop on-demand ridership systems in rural areas	☒	Reduce VMTs through connectivity within rural areas

11.3	DOTD / Local MPOs / Rural Governments / Municipalities	Collaborate and plan intentional connectivity between cities	☒	Reduce VMTs through connectivity across regions of Louisiana
12.1	DOA	Create an Office of State Planning in DOA	☒	Support locals in comprehensive land use, climate mitigation, and adaptation planning
12.2	DOA Office of State Planning / DOTD	Convene stakeholders to plan and design compact development across levels of government	☒	Maximize VMT reduction and utilization of regional transit through land use planning
12.3	DOA Office of State Planning / Regional MPOs / Local Government	Develop land use and transportation modeling tools for utilization in decision making	☒	Maximize VMT reduction and utilization of regional transit through land use planning
12.4	DOTD	Incorporate a climate impact analysis into DOTD project planning and design	☒	Mitigation unintentional emissions through large-scale transportation
12.5	DOA Office of State Planning / DNR	Create model solar ordinance policy materials	☒	Encourage purchasing of renewable power
13.1	PSC / LHC / DNR / DOA-OCD	Inventory and streamline application to existing efficiency programs	☒	5% retrofit of residential and commercial buildings each year
13.2	Legislature / Local Governments	Pursue legislation for redesign of PACE	☒	Encourage effectiveness of existing building efficiency programs
13.3	Legislature	Pursue legislation for efficient and electric appliance rebates	☒	Encourage efficiency of building components

13.4	Legislature / LSUCCC / PSC	Pursue legislation for energy efficiency code updates and standards	☐	Require minimum efficiency of buildings
13.5	DOA	Pursue funding for implementation of energy benchmarking requirements	☒	Monitor carbon impact of buildings and building materials
13.6	LSUCCC	Pursue building code updates through the 2021-2022 revision process	☐	Require minimum energy performance standards of buildings

NATURAL AND WORKING LANDS AND WETLANDS

14.1	LDAF / Land Trusts / Local Governments/ Private Landowners	Assess a baseline of areas most in need of conservation	☒	30% conservation of interior natural lands by 2030
14.2	LDAF / Parish and Municipal Governments	Convene stakeholders in major urban areas	☒	30% conservation of interior natural lands by 2030
15.1	CPRA	Study carbon storage potential of wetland projects	☒	Maximize carbon sequestration of coastal wetland restoration
15.2	CPRA	Invest in assessments of net carbon flux of coastal wetlands	☐	Maximize carbon sequestration of coastal wetland restoration
15.3	Universities / CPRA / blue carbon experts and verifiers / coastal ecologists	Collaborate with stakeholders to design a carbon credit and market	☒	Maximize investment in carbon sequestration of wetland restoration
16.1	USDA / LDAF	Leverage USDA investment for innovative practices	☒	Encourage conservation practices that sequester carbon

16.2	USDA-NRCS / SWCDs / LDAF	Convene farmers, ranchers, and foresters to identify barriers	☒	Increase access to regenerative agriculture and forestry practices
16.3	USDA-NRCS / SWCDs / Landowners	Advocate for further on-farming conservation farming	☒	Increase access to regenerative agriculture and forestry practices
16.4	Universities / LDAF / DEQ	Study ability of BMPs to reduce and sequester GHG emissions	☒	Encourage conservation practices that sequester carbon
16.5	LDAF / SWCDs	Develop an urban agriculture and conservation program	☒	Increase urban access to regenerative agriculture and forestry practices
16.6	LDEQ / LDAF	Collaborate on strategic design and locations of compost facilities	☒	Increase access to regenerative agriculture practices
16.7	LFA / LDAF / DOA / LED	Convene major foresters for educational sessions	☒	Increase access to regenerative forestry practices
		AN INCLUSIVE, LOW-CARBON ECONOMY		
17.1	LED / LWC / Louisiana Technical and Community College System	Convene stakeholders to develop vision and ambition for the transition plan	☒	Support Louisiana agencies, industries, and workers in energy transition
18.1	Department of Education	Develop climate curricula projects for K-12 education	☒	Center climate education in K-12 classrooms
18.2	LWC / Universities / Community Colleges	Develop relevant education, training, and re-training courses and curricula	☒	Guarantee job training for workers in energy transition

18.3	The Water Institute of the Gulf	Collaborate with universities to identify existing climate-related work and research gaps	☒	Support Louisiana universities in energy transition
19.1	LED / LWC / Louisiana Community and Technical College System	Invest in Louisiana-based low-carbon industry through tax-incentives	☒	Support Louisiana industries in energy transition
19.2	LED	Prioritize investment in disadvantaged business enterprises and communities	☒	Support underserved communities in energy transition
19.3	LWC	Assist transitioning workers through Rapid Response teams	☒	Support displaced workers in energy transition
19.4	LWC / Non-Profits / Businesses / Unions	Convene stakeholder groups for coordinated job placement	☒	Guarantee job placement in energy transition workforce

ACCOUNTABILITY AND ADAPTABILITY TO ENSURE LASTING SUCCESS

26.1	Legislature / DOA	Invest increased resources in implementing agencies	☒	Maximize effective implementation of the Action Plan
26.2	Universities / DNR	Prioritize federal and state research funding for CCUS analysis	☒	Maximize effective implementation of the Action Plan
26.3	Governor's Office / State Agencies	Establish an interagency working group to develop pre-permitting environmental siting analysis	☒	Ensure safe and resilient siting of energy infrastructure for the environment and communities

26.4	Governor's Office / State Agencies	Establish an interagency working group to review existing siting and permitting procedures	☒	Ensure safe and resilient siting of energy infrastructure for the environment and communities
27.1	Legislature / Governor's Office	Develop and workshop a governing framework for climate resilience	☒	Ensure long-standing and adaptive implementation of the Action Plan
27.2	Legislature / CITF / Governor's Office	Develop a public governing body for effective climate resilience	☒	Ensure long-standing and adaptive implementation of the Action Plan
28.1	DEQ	Create a GHG Monitoring Program	☒	Hold implementers accountable in incremental GHG reductions
28.2	Legislature / DEQ	Ensure mandatory, consistent updates to the GHG inventory	☒	Hold implementers accountable in incremental GHG reductions
28.3	CITF / Legislature / Governor's Office	Ensure mandatory, consistent updates to the Action Plan	☒	Hold implementers accountable in adaptive management of the Action Plan

Acronyms

Acronym	Definition
BMP	Best Management Practice
CCUS	Carbon capture, utilization, and storage
CCS	Carbon capture and storage
CHP	Combined Heat and Power
CITF	Climate Initiatives Task Force
CO_2	Carbon dioxide
CPRA	Coastal Protection and Restoration Authority
CRMS	Coastwide Reference Monitoring System
DEQ	Department of Environmental Quality
DOA	Division of Administration
DOE	Department of Energy
DOTD	Department of Transportation and Development
DWF	Department of Wildlife and Fisheries
NRCS	Natural Resource Conservation Service
DNR	Louisiana Department of Natural Resources
EPA	U.S. Environmental Protection Agency
ERGS	Emission Reduction Generation and Supply
GHG	Greenhouse gas
HELP	Home Energy Loan Program
HERO	Home Energy Rebate Option
HOV	High-occupancy vehicle
IAC	Industrial Assessment Center
IRP	Integrated resource plan
LDAF	Louisiana Department of Agriculture and Forestry
LDAR	Leak Detection and Repair
LED	Louisiana Economic Development

LFA	Louisiana Forestry Association
LHC	Louisiana Housing Corporation
LPSC	Louisiana Public Service Commission
LSU	Louisiana State University
LSUCCC	Louisiana State Uniform Construction Code Council
LWC	Louisiana Workforce Commission
MISO	Midcontinent Independent System Operator
MPO	Metropolitan Planning Organization
NGO	Non-governmental organizations
OCM	Office of Coastal Management
OOC	Office of Conservation
OSR	Oilfield Site Restoration
PACE	Property-assessed clean energy
PPA	Power Purchase Agreement
RPP	Research Practitioner Partnership
SEM	Strategic Energy Management
SIT	State Inventory Tool
SPP	Southwest Power Pool
SWAMP	System Wide Assessment and Monitoring Program
SWCD	Soil and Water Conservation Districts
TDM	Travel Demand Management
USDA	U.S. Department of Agriculture
VMT	Vehicle miles travelled